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THAILAND'S AGRICULTURAL ECONOMY . . . . .

By W. I. Ladejinsky*

The economy of practically all the countries in the Far East and in southeastern Asia is essentially agricultural, and Thailand's is no exception. But, whereas the agricultural economy of a great number of them is diversified, that of Thailand is not. Thailand is essentially a one-crop country, and rice is the crop. More than 90 percent of all the cultivated acreage is under rice, which is also Thailand's principal export product. The large rice output insures the people sufficient food, since rice is the principal item in the diet. It must be noted, however, that while in Asia the absence of famine is often an indication of a fair standard of living, it is not so in Thailand. The technique of farming in Thailand, the disposition of the output, and conditions under which many natives cultivate the land are characterized by features that spell a low standard of living.

Thailand (Siam), which recently became an involuntary victim of Japan's expansion, lies in the southeastern corner of Asia. The country is bounded by French Indochina on the northeast and east and British Burma on the northwest. A part of Thailand extends down the Malay Peninsula, where it is washed on the east by the waters of the Gulf of Siam and the South China Sea and on the west by the lower part of the Bay of Bengal. Its southernmost point borders British Malaya. In total area Thailand is about 200,000 square miles, or a little less than Texas; its greatest length is more than 1,000 miles from north to south, and its greatest width more than 500 miles.[1]

From the point of view of Thailand's economy, the country's location between large, densely populated regions not self-sufficient in rice is significant. By reason of this location, it benefits from the trade with these larger rice-consuming countries. Furthermore, as it is near the Strait of Malacca, where the great trade route of the Far East follows a restricted channel, it is favorably situated for the development of its foreign trade.

PHYSICAL BACKGROUND

The climate of Thailand, as well as that of entire southeastern Asia, is dominated by the Asiatic monsoons. Early in May the southwest monsoon initiates the rainy season, which lasts through October. From November until about the middle of February the north monsoon, or the dry winter-season wind, assumes domination, the result being a continuously clear sky. The summer, or hot season, extends from the middle of February to the end of April. The annual average temperature is 82° F.; the

* Office of Foreign Agricultural Relations.

[1] As a result of the Thai-French dispute in 1941, Thailand recovered all former Indochinese territory west of the Mekong in the Pakse and Luang Prabang Provinces, in addition to a strip of a maximum width of 15 miles along Cambodia's north and west frontiers. Thailand thus acquired a territory of about 21,000 square miles and a population of over 1,000,000.

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FIGURE 1.—Topographic Map of Thailand.

heat increases during February and March, reaching over 100° in April, the hottest month. It is coolest between November and January when the temperature falls to 62°.

The average yearly rainfall is 63 inches. The greatest rainfall is in the South, along the western coast, where the yearly average is as much as 130 inches. Precipitation diminishes inland in the direction of the eastern plateau. On the plains of central Thailand, where the major portion of the country's rice is produced, the average rainfall is 41 inches.

Some physical features of the country may be noted, for they determine Thailand's economic character. Chief among these are forest-clad mountains, which gird the country from north to south, and flat alluvial plains, which are inundated during the rainy season. Among the plains are those with large alluvial deposits, like the Menam Plain; those with only a thin cover of deposits, like the plains on the Malay Peninsula, in the southeast, and in the north of the country; and those with almost no general alluvial cover at all, like the Korat Plateau.

A more detailed description of the country's topography *(5, pp. 3-4)*[2] notes that-

[2] Italic numbers in parentheses refer to Literature Cited, p. 184.

The well-watered southern and western plains are devoted to agriculture; the pastures and forest of the middle zone permit animal husbandry and forest produce; and the mountain plateau * * * is almost devoid of vegetation. * * * The only real alluvial plain is that of the Menam, but it is only 60 miles wide on both sides of the river's mouth and does not extend more than 90 miles into the interior.

It is out of this topography that two distinct types of agriculture have developed: One, and by far the most important one, based on crops and primarily rice, and the other based chiefly on livestock. But even where animal husbandry exists, rice cultivation is not neglected.

The soils of Thailand are of varying quality; there are some very fine rice lands, but on the whole the soils are not rich in most parts of the country. The land has been under continuous cultivation for a long period, and its fertility has been reduced. The rejuvenation of the soil caused by volcanic action, so characteristic of Java, is absent in Thailand; nor are fertilizers used to keep up fertility. One of the characteristic features of Thailand soils is their deficiency in nitrogen, phosphorus, and potash. Even the best alluvial soils of the Menam Plain, where most of the rice is produced, lack sufficient quantities of the latter two elements. The soil of the valleys in the northern hilly part of the country is a sandy loam, but even on such lands rice crops are raised, largely because of the abundant rainfall during the growing season.

THE PEOPLE

Population Density

In contrast to the neighboring lands of China, India, and Java, the density of population in Thailand is relatively low. The total population of the country is estimated at 16 million - about 80 persons per square mile. Detailed examination, however, shows very uneven distribution, ranging from as low as 13 persons per square mile in one of the northern to 362 persons per square mile in one of the central Provinces. Barring such extremes, the relative density of the rural population is about 30 to the square mile in the North, 35 in the South, and 145 in the central Provinces. The density, therefore, is highest in the surplus-producing rice area of the Menam Plain and in the alluvial plains near the coast. But even here, it compares favorably with that of the countries mentioned above, especially that of Java. The conclusion to be drawn is that in Thailand there is no pressure of population upon the land except in a few delta sections. It is in a large measure because of the lower density of population that Thailand has become an important exporter of rice, which finds a ready market in neighboring countries.

Agriculture - the Chief Occupation

The occupational distribution of Thailand's population reveals how thoroughly agricultural the country is. According to the 1929 census, 83 percent of the population was engaged in agriculture, 1 percent in fishing, 7 percent in commerce, 1 percent in professional work, 2 percent in industrial pursuits, and 5 percent in domestic services. In the years since, the farm and fishing population have increased to 88.5 percent (1937 census).

The depression of the 1930's had much to do with the increase in the proportion of the population engaged in agriculture. The policy of the Government of Thailand

during the past decade has been one of reducing imports, particularly of foodstuffs, which until recently constituted the second most important import group. The reduction was to be achieved by diversifying agriculture to some extent, by reviving the moribund sugar industry, by raising agricultural output through the application of better methods of cultivation, and in general by compelling every family to become fully self-sufficient in foodstuffs. At about the same time, the Government undertook certain steps toward the industrialization of the country. It is too early to evaluate the degree of success or failure in this field, but in the process of combating the depression, the place of agriculture in Thailand's economy assumed even greater importance than before.

The Place of the Chinese

In addition to the Siamese, whose principal occupation is the cultivation of the land, there are over 750,000 Chinese in Thailand, representing about 5 percent of the population. The lion's share of domestic and foreign trade is in their hands. They provide also the bulk of the skilled labor in the mining industry, control the plantation-rubber industry, and are the country's principal moneylenders. Their position in Thailand may be summed up in greater detail in the following words of Le May *(3, p. 166)*, a long-time resident and close student of Thailand:

> But the rice-dealer is Chinese. So are the rice-miller and all his coolies. So is the boat-builder, an important handicraft in a country where rivers and canals form the high roads. So are the pawn-broker, the tailor, the boot-maker, the dyer of cloth, the furniture-maker, the iron-smith, the market gardener, the fish-dealer, the old tin-can collector and the hawker. One could go on adding to the list, almost *ad infinitum*, but I have no wish to weary the reader with a recitation of almost every craft known to man. Suffice it to say that, in practically every form of manual labour, the Chinese hold the field, and the Siamese sit by, watching all the requisite services of life being performed by the uniformly impersonal, very vociferous, but intensely industrious Celestial.

In general, the Chinese are Thailand's middlemen, or occupied that position until very recently (1938), when the Government enacted the first in a series of measures aiming to displace them from the commanding positions in the country's economic life.

The economic welfare of Thailand's population is implicit in its occupational distribution. The Chinese represent the economically privileged group. The Siamese make up the underprivileged, and in more than one sense are the very antithesis of the Chinese. With few exceptions, they shun or are unable and unwilling to engage in most of the occupations in which the Chinese predominate. They live in the country, close to the land, in a milieu that is conservative and static. Farming and its allied activities form the direct source of most of their income, which is none too large. What that income is is difficult to express quantitatively, but a description of the basic features of the environment in which they work and live is revealing.

Living Standards

Thompson *(5, p. 323)*, the author of an illuminating study on Thailand, wrote that "famine is unknown in Siam, and the standard of living is higher than in other Far Eastern countries." One might say that the first part of the statement presupposes the second, especially when one considers the families in China and India and their effect on the standard of living of the people of those countries. Complete crop failures do not occur in Thailand, although the crops are greatly reduced occasionally.

Even then, the Siamese do not suffer much, because normally the country is a large surplus rice producer and rice is its staple food.

Sufficient food supplies make for a higher standard of living in the Far East and in southeastern Asia. The Siamese have ample food supplies - even though Thailand imports considerable quantities of canned milk, canned vegetables, wheat flour, fish, and a few miscellaneous items. Such imports serve the needs of the few in the larger urban centers rather than those of the many in the rural regions.

Rice is the basis of the Siamese diet, with fish as a protein used whenever it is available. Of the first, the people eat enormous quantities, and are among the largest rice consumers in the world. The rice used is of two types: Glutinous in the North and Northeast and nonglutinous (white) in the Center and South of Thailand. The average daily per capita rice consumption in the North and Northeast amounts to 1.5 pounds, or 547 pounds yearly; the comparable figures for the Center and South are 1.2 and 438 pounds *(8, p. 275)*.[3] The yearly per capita fish consumption (mainly fermented, dried, or shrimp paste) was estimated at 41 pounds. Vegetables and fruit are eaten daily, while meat and eggs are consumed very rarely. Many drink tea, but few drink milk or coffee. Areca nut and betel leaf are chewed daily by practically everybody.

The food consumed by the vast majority of the Siamese is sufficient from a quantitative point of view, but an analysis of its quality reveals important deficiencies, largely because vegetable rather than animal protein predominates. A diet of this nature is almost certain to be low in efficient protein, in minerals, and in vitamins. Yet, the Siamese are accustomed to it and are satisfied. In the opinion of Zimmerman *(8, p. 277)*-

> The totality of information gathered seemed to suggest that *diet deficiency was more a matter of lack of knowledge of diet rather than a lack of food.* * * *
> In general, the Siamese have accommodated their diet to their needs so that diet deficiency does not exist in a very great degree. This is in spite of the fact that the major composition of the diet is rice and fish. * * * There seems to be very little or no malnutrition resulting from the pressure of population on the natural resources.

TAXATION AND INCOME

Prior to April 1, 1939, a Siamese farmer paid the following direct taxes: Land, poll, fruit and tree taxes, and a number of other unspecified imposts. Almost the entire burden of direct taxation fell on the first two items, with income tax a very poor third. The most important item was the land tax: In Central Thailand, the country's most productive agricultural region, the average land tax per family amounted to 20 bahts ($8.80), or 73 percent of all taxes; in the North, South, and Northeast, the comparable figures were 42, 37, and 13 percent, respectively. Direct taxation in relation to all expenditures (farming costs, interest, investment, food, clothing, household, and miscellaneous) accounted for 7 percent in the Center, 5 percent in the North, 5 percent in the South, and 5 percent in the Northeast. Zimmerman *(8, p. 78)* concluded that-

> If we consider the farming costs and the direct taxes as necessary business expenses, the taxes in the Center are 30 percent of necessary business expenses, 29 percent in the North, 49 percent in the South and 34 percent in the Northeast.

[3] For a discussion of the validity of the consumption figures, see pp. 177-178.

Under the impact of the depression and the consequent inability to collect taxes, in 1934 the Government decided to give some relief to the agricultural population by reducing land taxes by 50 percent, lowering the rates of the poll tax, and abolishing the fruit and tree tax. The new revenue code, effective April 1, 1939, signalized a radical change in the field of taxation. It abolished the land and poll taxes altogether, thus removing a direct, heavy burden from the farmers *(2, p. 4)*. As against these abolitions, customs duties on a large number of commodities were increased, and new taxes, such as the income tax, business tax, banking and insurance tax, and stamp duties, were introduced. This reform was meant to adjust taxation to the pockets of those taxed on the basis of social equity.

The Siamese farmers derive their income from three sources: Crops, handicrafts, and trade. In the South, trade is the most important source, and in the North, Northeast, and South handicrafts are as important as agriculture. In the Center, on the other hand, income from crops - chiefly rice - constitutes more than half of the total income. According to a rural survey of Thailand prepared by Andrews *(1, p. 213)*, total cash income in 1933-34 in the Center was 184 bahts ($85); in the North, 65 ($30); in the South, 74 ($34); and in the Northeast, 30 ($14). This does not mean, however, that the net earnings of the farmers in the Center were more than six times as large as those in the Northeast, three times as large as those in the North, and two and one-half times as large as those in the South. The investigation revealed that "the total annual expenditures of the different areas are approximately the same in magnitude as the total yearly earnings" *(1, p. 217)*. Central Thailand is engaged in the cultivation of a single crop - rice - and this causes large expenditures for land rentals and interest on the very heavy debt load. Monoculture leads also to the neglect of production of other commodities that must be purchased elsewhere. Furthermore, higher earnings in central Thailand have resulted in a higher standard of living, which in turn has meant larger expenditures. The net result is that in the depression years the margin of operating profit was lowest in the Northeast and Center. See table 1.

TABLE 1.—*Estimated average profit and loss on farm operations in Thailand, by regions, 1933*

REGION	TOTAL ANNUAL INCOME	TOTAL ANNUAL EXPENDITURE	OPERATING PROFIT
	Bahts[1]	*Bahts*[1]	*Bahts*[1]
North	65.20	51.93	13.27
Northeast	30.16	29.58	0.58
Center	184.56	177.46	7.10
South	73.89	58.59	15.30

[1] The baht was worth approximately 38.34 cents in 1933.

James M. Andrews *(1, p. 217)*.

The above figures indicate that farmers of all areas succeeded in meeting expenditures, but there were undoubtedly years of depression when farmers could make both ends meet only by going more deeply into debt and when even cutting expenses to the bone was of no avail. The effect of the first year of the depression upon farmers' income is well illustrated by the fact that in 1929-30 the surplus of income over expenditures of a member of a cooperative society was 92 bahts ($40) as against 7 bahts ($3) in 1930-31 *(5, p. 392)*. The fairly large surplus in the predepression year is not typical of the Siamese peasants as a whole. Primitive agricultural technique, relatively low yields, and inefficient economic organization have meant high costs

of farm production in Thailand - hence Zimmerman's conclusion *(8, p. 74)* "*that expenditures for costs of agriculture approximate closely to cash receipts,*" and that, in general, the gain per family is small, and *(8, pp. 80-81)* "*one of the reasons why they have such difficulty in paying taxes on a bad year is due to this low rate of gain.*"

INDEBTEDNESS AND CREDIT

Since the income of the farmer is so low, he is unable to save a surplus that would provide a basis for the accumulation of capital. He has little or no cash savings to tide him over difficult years. Of course, failure to have them is by no means an index of a low level of economic welfare; a farmer may well achieve economic progress through enlarged crop acreage, improved equipment, better breeds and larger number of livestock, more durable farm buildings, better food and clothes, etc. There is little evidence, however, that Siamese farmers have achieved much success along these lines. Since the peasant is unable to fall back on his own resources in times of stress, credit is the only solution, and the result is the heavy burden of indebtedness. Thompson *(5, p. 385)* noted that-

> The farmers' indebtedness was at the core of the whole economic crisis. The related problems of improving his technique, eliminating the middleman, and seeking new markets * * * were comparatively insignificant.

The total farm indebtedness is variously estimated from not less than 100 million bahts (46 million dollars) to not more than 150 million bahts (69 million dollars). Zimmerman estimated the farm debt at 143 million bahts (63 million dollars) as of the end of 1931. Its distribution was very uneven; 86 percent of the debt was carried by the Center, the region of commercial agriculture. The average per-family debt was 190 bahts ($84). In the north, northeast, and south, the respective figures were rather small: 30 bahts ($13), 14 bahts ($6), and 10 bahts ($4). Such a debt in itself is not dangerous, provided it is contracted at a fair rate of interest and used for productive purposes. In most instances, neither is the case in Thailand.

It has been estimated *(8, p. 204)* that at least 78 million bahts (34 million dollars) is harmful debt because "it is paying an extortionate rate of interest, and is in the hands of persons who will take the lands and securities of the country families if the interest is not paid." Interest rates vary enormously, but for the Center Provinces 23 percent is about the average. However, by direct and indirect methods, the creditor is obtaining an interest rate much higher. Often the creditor is not anxious to have his debt paid; he would much rather go on collecting interest.

The borrowers do not understand the economic meaning of interest; far less do they understand compound interest. So debt mounts till theoretically it is far above the selling value of their farms. They then either become the tenants of the creditors, paying them half the crop as rent, or migrate to some less populated district. There they take up new land and go through the same cycle all over again.

The Siamese farmer spends freely and sometimes foolishly in order to give vent to his gregarious instinct and those social customs arising from it. When his ready cash is spent, he borrows without giving the terms of the loan any consideration. The vexatious questions of interest and repayment are dismissed as matters to be met some day in the future and not worth troubling about or thinking of in the present. This implies that much of the debt is not contracted for productive purposes but is consumed without adding to income.

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Numerous measures have been suggested to remedy the situation, such as the establishment of an agricultural bank to assume the farmers' debts, the issuance of bonds to creditors in exchange for mortgages on ricelands, and the setting up of a special fund for loans to farmers. But the agency which, it is believed, will eventually solve the debt problem, as well as raise the standard of living of the farmers to a higher level, is the Cooperative Credit Society. This was organized to widen the range of credit to an extent that, individually, members of the society could not approach and to guide them in their expenditures. The society was to extend loans for repayment of debts and for purchase of land and agricultural implements. Its functions were in time extended to buying, storing, and selling rice.

The cooperative movement dates back to 1916 when the Siam Commercial Bank advanced to the cooperatives a loan of 300,000 bahts. The development was accelerated by passage of the basic Cooperative Society Act in 1922 and by a series of supplementary regulations in subsequent years. The fund of the cooperatives was gradually increased to 1,800,000 bahts ($790,000). Until 1937 the societies borrowed money from the fund provided for them by the Government at 6 percent and lent it to the members at 12 percent. Thereafter the rate of interest was brought down to 4.5 percent, permitting the societies to make long-term loans to their members at 7.5 percent and short-term loans at 9 percent.

After more than two decades of existence, the number of societies has grown to 922 with a membership of 11,000. The cooperatives have helped to reduce the debt burden of numerous farmers and to buy land and equipment which, otherwise, they would have had to go without. But, on the whole, the movement has barely scratched the surface. The debt problem is still with them, for by 1934 the cooperatives had taken over only about 2 percent of the total farm debt. A similar achievement in the years since then would still leave private individuals as practically the only sources of credit. The cooperatives are not self-supporting; their expansion has depended upon funds made available for them by the Government supply because they could not raise any capital from their own members. For this reason, the rate of expansion depends, for some time to come, upon the Government.

Despite the slow growth, close students of Siamese agriculture believe that the ultimate value of the cooperatives is inestimable. In the opinion of Andrews *(1, p. 342)*, the cooperatives-

> can and gradually will transform the Siamese farmer from a simple and unprogressive peasant who practises age-old methods to derive a bare subsistence from the soil into a progressive agriculturalist able and anxious to make full use of the improved methods of cultivation and commerce which industrial civilization has brought to the world.

LAND OWNERSHIP AND TENANCY

The Siamese farmers, like farmers the world over, do not represent a homogeneous group. They differ greatly in their relationships to the land. If all the cropland of Thailand were distributed equitably, the average per farm family would amount to over 4 acres. In reality, there is a regional difference in acreage per farm: In the central plain, as a whole, it it about 10 acres *(5, p. 326)*, as against 4 in the North, 2.5 in the Northeast, and 3.2 in the South *(8, p. 18)*. Furthermore, in the three last-mentioned regions, there are numerous holdings of less than 2.5 acres, while many holdings of the central plain run into hundreds of acres. The much larger holdings in

central Thailand are the result of a definite trend in landownership in that region; namely, the replacement of the small farmer by the large landowner who is not necessarily the cultivator. This came in the wake of higher land values accompanying the steady growth in rice exports and transportation development. Thus, in Thailand's most important rice area, more than in any other section of the country, many farmers own no land at all and are compelled to cultivate somebody else's land under very onerous conditions.

Official data dealing with the tenancy problem are not available, but the salient facts revealed by private surveys are illuminating. Before the depression, 36 percent of the farmers of the central plain were landless. The figure was much higher in the densest and most productive sections of the plain. In Dhanyaburi, near Bangkok, 84 percent of all the farmers were tenants. The absentee landlords live in the cities, their land being managed by local rent collectors.

In the North, the tenants cultivate the land on a share basis, which is usually about half of the crop. In addition, they furnish their own equipment, livestock, and primitive farm buildings, while the landlord pays the land tax. In commercialized farm regions, cash rentals predominate. The tenants have no security of tenure; the contracts last only 1 year, and eviction is common. The incentive to improve the land is lacking, and the economic and social consequences upon a large group of the peasantry are deplorable indeed.

LAND UTILIZATION

Forestry

Official data on land utilization in Thailand are lacking. The proportion of farm land to the total area of the country is difficult to ascertain, but one thing is clear: Forest land exceeds farm land. It has been roughly estimated that approximately 70 percent of the area is covered with forests. In the economy of Thailand, forests play an important part, both because of the wood used locally and even more because of the teak forests, the products of which are in great demand abroad. The Siamese teak forests have been in the past, and still are, the most valuable state forest property.

The teak forests are located in the northern part of Thailand, but only in certain localities where the general conditions are suitable. Thus, while the northern forest area has been estimated at 41,000 square miles, the teak-producing area is only about 11,000 square miles. The teak tree will grow on most of the soils in northern Thailand. It is commonly found on soils derived from granite, sandstone, and limestone formations. Teak grows even in the valleys on alluvium, but it can not stand prolonged waterlogging; it prefers a deep, well-drained soil, exposure to sun, an altitude ranging from 600 to 2,500 feet, and a rainfall of 40 to 70 inches. The process of growth is a very slow one, although teak trees grow fast when young. During middle life and old age the growth is very slow, so that on the whole it usually takes from 140 to 160 years for a teak tree to attain 7 feet in girth.

Teak is world-famous as one of the finest all-round woods in existence. It can be used for all sorts of purposes because of its durability, and it ranks as the finest ship-building timber in the world. During the 5-year period 1933-37, the annual

cut averaged 87,000 trees, or 6,440,000 cubic feet. The royalties collected by the Government in 1937 from the teak concessions amounted to 1,871,225 bahts ($841,000).

With the exception of a few thousand square miles of privately owned forest, all forest lands in the country belong to the public domain, the exploitation of which is regulated and supervised by the Government. Under the authority of a decree issued in 1913 for the protection of forests, the latter are divided into reserved and unreserved forests. Anyone can fell and use trees in the unreserved forests, but trees of the reserved group are divided into three classes: (1) Very valuable trees, which may not be felled at all, (2) valuable trees, and (3) other trees. Minimum exploitable girths are fixed for the various reserved species, under which no tree may be felled. Anyone wishing to fell and use reserved trees must take out a permit and pay royalties to the Government. On the whole, indiscriminate and wasteful use of the teak forests has come to an end with the recognition of the value of conservation and the importance of a permanent forested area in relation to climate and rainfall.

Cropland

Important as the forest lands are, it is the farm land of Thailand that constitutes the real wealth of the country. It has already been indicated that Thailand's agricultural statistics do not show how much of this land there is available. Zimmerman's estimate of the land utilization for the country as a whole, as well as by region, is therefore of special interest (table 2). The total area of cultivated or utilized land was estimated at 12 million acres, or 10 percent of the total area of Thailand. Central Thailand alone accounted for 55 percent of all the cropland, while the North, Northeast, and South, represented 13, 22, and 10 percent, respectively.

TABLE 2.—*Proportion of utilized land surface in Thailand, 1930*

REGION	RURAL FAMILIES (COUNTRY MINUS BANGKOK)	APPROXIMATE AREA OF UTILIZED LAND PER RURAL FAMILY	TOTAL AREA CULTIVATED OR UTILIZED	TOTAL EXISTING LAND SURFACE	PERCENTAGE LAND SURFACE CULTIVATED
	Number	*Acres*	*Acres*	*Acres*	*Percent*
North	286,000	5.6	1,591,324	22,654,128	7.0
Northeast	615,000	4.4	2,718,100	39,595,304	6.9
Center	650,000	10.5	6,827,373	43,361,849	15.7
South	277,000	4.4	1,218,203	17,936,495	6.8
Total	1,828,000	-	12,355,000	123,547,776	10.0

Zimmerman, Carle C. *(9, p. 386).*

Since the land utilized is estimated to be only 10 percent of the total area of the country, it could be expanded considerably. Even the cultivated land on the lower delta of central Thailand represents only 40 percent of the available land. An adequate irrigation and flood-control system could put much of the unused land into rice. The other possibility of expanding the crop area is by teaching the farmers to appreciate the benefits that could be derived from dry farming. Thus, large areas lie unutilized *(9, p. 391)*-

> because the concept of a dry agriculture, other than the spade culture of their homestead gardens, is practically unknown to the Siamese. If dry culture were developed, it would mean new crops and abundant resources for many millions more people.

Dry agriculture would necessitate also a change in agricultural equipment, other animals besides the water buffalo, and, above everything else, a break in the centuries-old notion that wet rice culture is the one-and-all of a farmer's economy. For the time being, there is no evidence that the farmers of Thailand have any desire to make any change in their accustomed ways of farming.

RICE - THE PRINCIPAL CROP

The Importance of Rice

Available official data on land utilization refer only to planted area, which in 1937 amounted to 8.3 million acres, not including about 300,000 acres under rubber.[4] The area was distributed among eight crops: Rice, corn, peas, cotton, sesame, pepper, coconuts, and tobacco. A glance at the acreage of the crops other than rice shows that Thailand is a one-crop country par excellence. In 1937, nearly 94 percent of the planted land (including rubber acreage) was under rice. A review of Thailand's agricultural production is essentially a review of its rice economy.

How important a part rice plays in the life of the country is clear from the acreage under rice. It may be added that it is the principal export product even though its share in the total export trade of the country has declined in recent years; namely, from 71 percent in 1929 to 48 percent in 1939. It is also the food of the country; it is eaten daily with side dishes of other foods. Even animals, whether they be elephants, horses, cattle, pigs, dogs, or fowls, eat it, as do the fish in the ponds. It is used for making alcoholic drinks; it enters largely into all ceremonials; and the superstitious observances in connection with it provide the people with their most frequent occasions for holiday making. Thailand is a "land of rice," and the purchasing power of the great mass of the people depends, to a very large degree, on the rice crop; and imports, as well as the internal trade of the country, depend on that purchasing power.

Rice Culture

Siamese farmers cultivate two types of rice: Glutinous and nonglutinous. The first variety derives its name from its stickiness when cooked; it is the staple food of the people in the North and Northeast. Nonglutinous rice is eaten in the rest of the country and is also the type exported.

Siamese farmers practice two methods of rice growing: One by sowing the seeds broadcast on the land where it is to grow and the other by sprouting it first in small patches or seedbeds of specially prepared ground and afterward transplanting it into the fields. The first is the older system - the adaptation of the ancient hill cultivation to the plains, for which the local rainfall is the only water supply required. The second method is used whenever there is sufficient water, either from rainfall or irrigation, to cover the soil entirely, and an adequate labor supply. This method, common to all rice-growing countries of the East, is much more laborious, but is also much more productive. When a sufficient supply of water is available, it is the method used.

[4] Official statistics do not record rubber acreage.

Not all the rice planted matures simultaneously. There is the light crop that ripens in 2½ to 3 months from the time of planting; the midyear crop that ripens in 3 or 4 months; and, finally, the largest part of the crop that matures in 4 or 5 months. The sowing of different varieties of rice accounts for the planting and harvesting operations throughout the greater part of the year. In the central plain, planting may begin in May and continue into October, and harvesting continues from September to January. In northern and eastern Thailand, planting begins in June and continues until October, and harvesting is from November to February. In the South, the respective dates are July to December and January to May.

The equipment used by the farmers in planting, harvesting, and threshing is simple. It consists of a wooden plow fitted with an iron share and a wooden harrow, which is a rake with teeth made of hardwood. The motive power is furnished by buffaloes in the plains, where the atmosphere is humid, and by bullocks in the higher and drier parts of the country. A knife or sickle for harvesting completes the set of implements generally used by the farmers. Mechanical plowing, harvesting, and threshing machinery have been tried, but under Siamese conditions none have yet been found economical and truly serviceable. In spite of the poor wearing quality of the farm equipment used, it is effective in rice fields, where heavy imported plows are useless. Furthermore, the high cost of machinery, the conservatism of the farmers, and the fact that their means are small are factors that militate against the adoption of improved machinery in farming. With alterations and improvements, however, machines might be developed to take the place of some of the manual labor.

In preparing the fields, farmers use little fertilizer, although the fertility of Thailand's soil could be vastly improved. In no section of the country are artificial fertilizers employed to any extent. Even manure is used sparingly and only where the water supply is very irregular or the soil extremely poor. Manure is sometimes put on the seedbeds, but rarely is it placed on the main fields. This neglect to improve the soil has resulted in yields that are among the lowest in the rice-producing countries of Asia.

Moisture is of the utmost importance in the production of rice. In Thailand it is supplied by rainfall and by rivers overflowing their banks and inundating the fields. The quantity of water required for rice production is about 70 inches; the average precipitation for the central plain is almost 60 inches, only 41 inches of which falls during the summer because much of the monsoon moisture is lost by precipitation on the western mountains.

Thus, in many sections that depend on rainfall alone the yield is very poor; in the central plain, where nature has provided facilities for inundation, the results are much better. However, care must be exercised that the level of unundation is not high enough to swamp the crop, that it lasts a sufficient length of time to mature the crop, and that the rivers fall from inundation level in time to permit harvesting. The relationship between flood and rice harvest is so close *(6, pp. 7-8)* that-

at times almost 50 per cent of the crop may be ruined by lack of water or by excess of water. The hazard of light flood or of heavy flood has determined the density of the population, 125 to the square mile, relatively slight for an area of rice production, and explains the relatively large export of the cereal in times of favorable crop conditions.

Only artificial irrigation could stabilize these natural conditions and provide the water where rainfall is deficient and rivers fail to inundate the land. Yields under irrigation would be more stable, production would be raised, and Thailand would

be able to maintain its position against the increasing competition of neighboring rice-growing countries.

With this in mind, the Government early in the century engaged a number of experts, who drew up ambitious irrigation schemes. Part of one of the original plans called for the irrigation of 4.5 million acres at a cost of 101 million bahts ($46,000,000). In time the scope of the work had to be reduced, but the work has never stopped. The schemes completed since 1916 or still in progress cover about 1.6 million acres, or 16 percent of the country's cropland, at a cost of 49 million bahts ($21,000,000). In June 1940, a 5-year plan was submitted to the Government to complete the irrigation projects initiated before the first World War.

Rice Acreage, Production, Yield, and Exports

In appraising the acreage under rice in Thailand, a distinction should be made between planted and harvested area. The difference between the two is quite significant and is caused either by excessive rain or by drought. The latter is the more prevalent, as indicated by records covering a century *(4, p. 190)*. In the years 1932-36, the damaged area annually averaged 14 percent of that sown, the minimum being 6 percent in 1932 and the maximum 32 percent in 1936.

The growth of exports encouraged farmers to make rice fields out of land subject to uncertain rainfall. Despite the hazards, the expansion of the planted area along with that of the irrigation system made possible an increase in the harvested area. Between 1921-25 and 1935-39, the area harvested expanded from an annual average of 5,964,000 acres to 7,087,000 acres, or by 19 percent (table 3). Production, on the other hand, increased but slightly - from an annual 7.2 billion pounds (1921-25) to 7.7 billion pounds (1931-35), or by 5 percent. The output during the 5 years 1936-40 averaged only 7.0 billion pounds, mainly because of an exceptionally small crop in 1936. Approximately 60 percent of the output is produced in the central plain, 25 percent in the eastern part of the country, and most of the remainder in the North (fig. 2).

TABLE 3.—*Acreage, yield, production, exports, and per capita utilization of rice in Thailand, average 1936-40 with comparisons*

AVERAGE	ACREAGE HARVESTED	YIELD PER ACRE, ROUGH RICE	PRODUCTION, CLEANED RICE	POPULATION[1]	PER CAPITA PRODUCTION[1]	EXPORTS	AVAILABLE SUPPLIES	PER CAPITA UTILIZATION [1]
	1,000 acres	*Bushels*	*Billion pounds*	*Millions*	*Pounds*	*Billion pounds*	*Billion pounds*	*Pounds*
1921-25	5,964	36.3	7.2	10.1	710	2.1	5.1	505
1926-30	6,463	33.9	7.3	11.2	652	2.7	4.6	411
1931-35	7,171	32.1	7.7	12.9	595	3.1	4.6	357
1936-40	-	-	7.0	14.9	468	3.1	3.9	262

[1] Population data for earlier years are believed to be incomplete.

But while production remained stable in the past two decades, the per capita production of the 1930's declined by 22 percent from that of the 1920's. Exports within the same period of time increased by 29 percent. Thus the available supplies for domestic utilization point to a reduction in per capita consumption of 34.5 percent, if the production and population figures are correct. However, the validity of the figures are questioned - in the opinion of the writer justifiably so - as indicated by the following statement *(7, p. 200)*:

> For Thailand, the crude data on per capita utilization suggest a reduction of nearly 35 per cent between the 1920's and the 1930's. But the population and the production statistics

FIGURE 2.—Principal areas of rice cultivation in Thailand and contiguous parts of the Mekong and Salween Valleys. (Courtesy of the Geographical Review, published by the American Geographical Society of New York.)

both seem biased, the first pointing toward an incredibly large increase and the second toward a surprising decline. If one should assume that the true population increase in Thailand was 20 rather than 31 per cent between the 1920's and the 1930's, and that average unit yield remained the same instead of declining 14 per cent between the two periods, the estimates of per capita utilization would then indicate a slight rise rather than the large decline. * * * These are not altogether unreasonable assumptions. Consequently in Thailand * * * the direction of change in per capita rice utilization between the 1920's and 1930's must be regarded as unknown. The large decline in per capita rice utilization * * * is undoubtedly misleading and unrepresentative of the facts. Stability, a modest decline in consumption, or a small increase, is possible and seems more reasonable.

The fairly constant level of production, notwithstanding the increase in acreage is explained by the declining yields, as indicated in table 3. Between 1921-25 and 1935-39, the average yield declined from 36 to 30 bushels per acre, or by 17 percent. In general, rice yields of Thailand are only about 35 percent of those of Japan, and Thailand occupies ninth place, among the 12 rice-producing countries of Monsoon Asia. Without going into the detailed causes underlying the regional differences in yields *(7, pp. 61-62)*-

it can be said that natural conditions favor higher yields in the Sino-Japanese part of the rice belt than in the southern part, for flood and drought in particular are greater hazards in the south. In addition, the paddy area of the northern region is more largely irrigated by artificial means and the use of fertilizers is more common, presumably with beneficial effects upon the level of yield despite a wider prevalence of double cropping with rice. Moreover, cultivators of northern regions, especially in the Japanese Empire, use superior varieties and seemingly employ better methods of cultivation in such details as transplanting or weeding.

Thailand produces only about 5 percent of the total world output of rice; but it is the third largest exporter, accounting for approximately one-fifth of total

world exports. During the years 1921-35, exports averaged 38 percent of the annual output. Between 1916-20 and 1921-25 the volume of rice exported from Thailand increased from 1.5 to 2.4 billion pounds, or by 60 percent. In subsequent years, the rise in exports was less pronounced, but nonetheless considerable.

The maintenance of the high level of exports in depression years entailed considerable difficulties. For many years, Hong Kong and China were the largest consumers of Siamese rice. But in retaliation to Thailand's ill-treatment of its resident Chinese, the southern parts of China imposed a high tax on Siamese rice imports, the result being a temporary reduction in such imports. In consequence of the depression, Java, British Malaya, Ceylon, and the Netherlands Indies began to take active measures to extend local production and restrict the entry of foreign rice. Despite these measures, Thailand's rice exports during the depression actually increased, mainly because of their good quality and low prices.

The average price of Thailand's White No. 1 (15 to 25 percent broken) was 8.6 bahts per picul in 1925-29.[5] In the following 5-year period the price averaged only 4.4 bahts, with a low of 3.1 bahts in 1934. The economic effects upon the farmers and the country as a whole were disastrous, as may be judged by the following figures: In 1933-34, Thailand exported 3.6 billion pounds of rice valued at 83 million bahts, whereas in 1928-29 exports amounted to 3.2 billion pounds valued at 175 million bahts. The problem, then, that confronted Thailand was not so much one of outlets for its surplus rice as of a price more in accordance with the needs of the farmers.

The problem of low prices, which accentuated the economic difficulties of the farmers, calls for consideration of the question of the Chinese middleman. While Siamese farmers produce the crop, they do not sell it to the consumer. The purchase from the cultivator, its transportation and sale to the mill, as well as much of the export trade, are carried on by the Chinese. The farmers always complained against the economic power concentrated in the hands of the Chinese, but during the severe depression of the 1930's the outcry against the Chinese, as moneylenders, as rice merchants, and as people responsible for thwarting native commercial talent became even more vociferous. The Government enacted numerous measures, aiming to displace the Chinese in the commercial life of the country.

With respect to rice, the Government in 1938 organized the Thai Rice Company - an agency that is expected to carry on the functions of the Chinese, both as middlemen and as exporters. The company buys rice directly from the farmers and is also beginning to enter the milling and export trades. The company also enjoys preferential rates on the Government-owned railroads, as well as Government subsidies in marketing and storing rice. The introduction of a licensing system for rice exports from Thailand weakened the position of Chinese rice traders and exporters still further. The effect of these measures on the economic position of the Chinese is detrimental; but whether the displacement of the Chinese by a Government agency will improve the economic status of the farmers remains to be seen.

OTHER CROPS

Thailand's rice crop overshadows all others to such an extent as to place them in a decidedly secondary position. Aside from the 300,000 acres under rubber, which

[5] Approximately 2.8 cents per pound.

will be touched upon later, Thailand has only 200,000 acres under crops other than rice or 2.3 percent of the country's total planted area. Chief among these crops are coconuts (127,000 acres), tobacco (22,000 acres), cotton (17,000 acres), corn (15,000 acres), peas (12,000 acres), pepper (3,000 acres), and sesame (2,000 acres). One of the reasons for the small acreage in secondary crops is that *(5, p. 394)* "any region that can raise rice will do so; and competing crops, even though they may be better suited to the soil, will go to the wall." This in Thailand was particularly true of sugarcane, and home-grown sugar has not been able to compete with the cheaper sugar imported from Java.

Cotton

Thailand's principal import item is cotton goods because domestic cotton has always been of poor quality and production small. The expansion of rice exports was instrumental in doing away with most of the rather small cotton area. The ability to pay for imported cotton goods - even of the cheapest kind - is usually an invitation to discontinue home production. However, the economic depression of the 1930's, the desire to diversify agriculture, and Japan's interest in cotton potentialities caused the Government to revive cotton production. Free seed was distributed, and the Government is now purchasing the cotton grown from it, hoping to foster a new crop for which there would presumably be a ready market in Japan. To date, however, cotton production in Thailand is negligible.

Tobacco

Among the secondary crops, tobacco is becoming more important, with production increasing in recent years. The heaviest yields are obtained on the alluvial soils of the banks and islands in the upper reaches of the Menam River and its tributaries, in certain sections of the North, and in eastern Korat. The Siamese are great smokers, and domestic production must be supplemented with imported leaf and cigarettes. From 1933 to 1938 Thailand's annual imports averaged 2.7 million pounds of leaf tobacco and 4 million pounds of cigarettes.

The Thailand Government is keenly interested in encouraging the cultivation of tobacco from American flue-cured type seed, and approximately 8,000 acres were devoted to growing the flue-cured types during 1940. The tendency in the past few years has been for a rise in domestic output and a decline in imports. This development has been brought about by an increase in the import duty on leaf from 37 to 43 cents per pound on February 19, 1939; the imposition on March 23, 1939, of an excise tax on cigarettes of both domestic and foreign origin; and the establishment in March 1939 of a Government monopoly over the sale of domestic leaf. The increase in import duty and the establishment of the excise tax on cigarettes have tended to favor increased production and further substitution of domestically grown flue-cured tobacco for American. While the duty raised the price of American leaf in Thailand, the excise tax has increased cigarette prices, thereby inducing domestic manufacturers to offset at least a part of the increase by the substitution of lower priced domestic flue-cured for American.

As anticipated, imports of manufactured and unmanufactured tobacco decreased in 1940, and there was a corresponding increase in the production and consumption of

domestic leaf, of both native types and flue-cured types. According to official figures the total production of leaf tobacco in Thailand amounts to about 18 million pounds annually, nearly 95 percent of which is native tobacco; the remainder is grown from seed of the American flue-cured type. The native types are used principally in pipes, hand-rolled cigarettes, cheroots, and snuff. The flue-cured type is used in machine-made cigarettes, supplanting flue-cured tobacco imported primarily from the United States.

Pepper

At one time Thailand was a fairly large producer of pepper, but the pepper industry is now declining. Pepper cultivation was formerly concentrated in the humid peninsula around Chandaburi and Puket, but in recent years it has been displaced in this area by rubber. In 1919, the area under the crop amounted to 10,000 acres, with an output of 7.6 million pounds, whereas in 1937 the respective figures were 3,000 acres and less than half a million pounds. This decline may be attributed to a drop in prices, coupled with unscientific methods of cultivation and careless preparation of the commodity.

Coconuts

In terms of acreage under secondary crops, the coconut crop, with an area of 127,000 acres, is the largest. In years past, coconuts were grown largely around Bangkok and inland in central Siam, but the ravages of the coconut beetle and the red weevil have been so serious that coconuts are now grown on a very limited scale in those parts of the country. Western Thailand and the peninsula are now the centers of production. The estimated 6 million trees, of which more than half are in bearing, are not found in plantations but in clumps around farmhouses or in semicleared jungles. The commercial possibilities of coconut growing have never been realized in Thailand, and most of the crop is consumed locally.

Rubber

The one crop that has been playing an increasingly important role in Thailand is rubber. Its cultivation is of comparatively recent origin; rubber growing throughout most of southeastern Asia began immediately before and after the turn of the century but in Thailand only toward the end of the second decade of the century. Climatic conditions for rubber growing are less favorable in Thailand than in British Malaya, the Netherlands Indies, French Indochina, and Ceylon because of the relatively low rainfall and the long dry periods prevalent in most parts of the country. A rainfall of at least 75 inches, well-distributed throughout the year, is necessary to insure the humid atmosphere in which rubber trees flourish. Such conditions are found in southeastern Thailand near the coast, as well as in the southern part of the peninsula.

Data concerning the development of rubber growing in Thailand are scanty. It is known, however, that most of the rubber is produced by small-scale farmers, who in 1935 numbered over 50,000. The owners, workers, and traders in rubber are mostly Chinese. The growth of the industry has not been attended with the care characteristic of rubber growing in British Malaya and the Netherlands Indies. Scientific

methods of cultivation are practiced but little. The trees are planted too close together; parasites and weeds flourish unchecked; and there is little done to combat soil erosion. Supervision of both production and marketing are inadequate, and hence there is no standardization of the rubber. The net result is that the yield of rubber per tree in Thailand is approximately one-half of that in Malaya or Sumatra, and its selling price is lower than that of neighboring countries.

Nevertheless, the rubber industry has made progress, and it ranks third in importance after rice and tin in the country's economy. The rubber area in 1938 was estimated at 312,000 acres and the output at about 40,000 metric tons. When on March 14, 1938, Thailand's demand of the International Rubber Committee, of which it has been a member since 1934, for a larger export quota was granted, it represented an important increase over the 40,000 tons then in force. Thus the quota for 1939 was raised to 54,500 tons, for 1940 to 55,300 tons, for 1941 to 55,700, for 1942 to 56,000, and for 1943 to 60,000 tons. The maximum area of new planting for the 5-year period was set at 31,000 acres, with additional allowances in the event of new planting by any other member of the International Rubber Committee.

In terms of acreage and output, Thailand represents only a fraction of the world rubber plantation area and production. The industry is highly important, however, from the point of view of Thailand's economy. From 1934-35 to 1939-40, the value of rubber exports rose from 9 million bahts ($4,000,000) to 30 million bahts ($7,500,000); in relation to the country's total exports, it was an increase from 5.4 percent to 14 percent. Furthermore, rubber constitutes the third largest export item, rice and tin still enjoying the first and second places, respectively. Judging by the trend in the past 5 years, rubber is on its way to replace tin as the second most important export commodity.

LIVESTOCK

Animal husbandry is carried on in the hills and on plateaus that have little cultivable land. The North and the Northeast, especially the vast Korat Plateau, are the country's principal cattle-raising regions. It has been estimated that approximately 50 percent of the bullocks and buffaloes are raised in the Northeast.

The animal industry is well developed in Thailand quantitatively, but the value of the animals in terms of meat, milk, and manure is small. The natives themselves eat very little meat, drink no fresh milk, and make relatively little use of the manure. In recent years, the demand for beef increased in Bangkok and in the large market towns. But in general, domestic animals are valued for their work on the farms and as a source of motive power in transportation, and they therefore constitute wealth second only to that of land. The farmer must have cattle for use in cultivation, and in prosperous years he invests money in cattle almost as heavily as he does in land.

The most important groups of domestic animals raised by the Siamese farmers are bullocks, buffaloes, elephants, and horses. According to statistics on livestock population for 1937, there were 5.6 million bullocks and 5.4 million buffaloes as against 11,000 elephants and 374,000 horses. Buffaloes are used mostly for agricultural purposes, while bullocks are employed more for transportation than for plowing. In northern Thailand, elephants are used in the timber industry for hauling teak

logs but scarcely play any part in the lives of rural Siamese. Horses have a restricted use in a few regions, but to the farmer the horse is of secondary importance.

Despite the importance of animals in the economy of every farmer, he knows practically nothing about scientific breeding or about the prevention and cure of their diseases. The diseases that affect Siamese cattle are fairly well-known, but very little has been done to put this knowledge at the disposal of the farmers. The result is that Siamese livestock is poor in quality.

SUMMARY AND CONCLUSIONS

The outline of Thailand's agricultural economy shows that it was in need of thorough overhauling long before the depression of the 1930's fully revealed its ailments. Since rice is by far the most important crop of Thailand, the country has placed all its eggs in one basket, as it were. New crops have not been developed, and old established ones have declined and given place to more rice. Rubber growing has come to occupy an important place, but the number of farmers engaged in it is relatively small. But even in the field of rice cultivation Thailand does not excel. There is little or no seed selection, little use of manure and no artificial fertilizers, and generally inefficient technique all around. Thailand's rice yield per unit of land ranks ninth among those of the twelve rice-producing countries of Monsoon Asia. Nor is animal husbandry, another important branch of Thailand's agriculture, in a healthy and profitable state.

Siamese farmers are burdened by a huge debt, much of it contracted at usurious rates for comsumption rather than for productive purposes. Furthermore, in disposing of their rice to commercial interests, they have been getting the short end of the bargain. In addition, the tenancy problem in Thailand is serious. The sum total of all these disabilities, whether of the farmers' own making or thrust upon them by forces over which they have no control, is that their economic welfare is at a low level indeed.

Until the middle of the 1930's, the Government of Thailand paid little attention to agriculture or, for that matter, to any other phase of the country's economic development. It was assumed that the farmers knew their own business and what was best for them, and all the State had to do was to see that they paid their taxes. With the depression and the change in government (1932), the slogan "Thailand for the Thai" was adopted, and the long period of noninterference in economic matters came to an end. The Government has since made strenuous efforts to take into its own hands the country's business - big and small - controlled by foreigners, with a view to improving the position of the Siamese in agriculture, tin mining, trade, and industry.

Through the Thai Rice Company, the Government expects to wrest the rice business from the Chinese, thereby improving the terms of trade for the farmers. A number of other measures have been considered to improve their economic status. Among these should be mentioned the expansion of agricultural credit through the encouragement of cooperative credit societies; establishment of silos for storage of rice; advances of credit on rice so stored; help to tenants in acquiring land; extension of the work of agricultural experiment stations; dissemination among technical primary schools of knowledge gained from such experiments; extension of the irrigation system;

fostering of the cultivation of crops other than rice; and help in improvement of the quality of the crop and in raising the output per unit of land from its present low level, thereby lowering the cost of production.

Some of these measures have been initiated, while others are still in the blueprint stage. But problems of reorganizing Thailand's agriculture on a sounder basis are so formidable that even the immediate application of all these measures would not necessarily spell success. It will be a long-drawn-out development at best, predicated on peace and political and economic independence. At present Thailand does not enjoy either. Thailand's political independence enabled the Government to outline and begin some of the work of rural reconstruction. It also made it possible for Thailand to launch, for good or bad, the program of exclusion of all non-Thai from the country's economic life. Now that Japan has occupied Thailand, it may safely be assumed that Japan's war needs will determine what Thailand will or will not do in agriculture, or in any other field. It is doubtful, therefore, whether Japan's occupation of Thailand will provide a favorable environment for the ambitious plans of agricultural improvement.

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THE EVOLUTION OF THE ARGENTINE GRAIN PRICE-GUARANTEEING POLICY . . . . .

By Louis C. Nolan*

On November 14, 1941, the Argentine Government reaffirmed its policy of guaranteeing minimum prices to grain producers by establishing these prices again in the face of an unparalleled grain crisis. This action was implemented by setting up a virtual state monopoly of the domestic grain trade. This well-established price-guaranteeing system as it now operates includes acreage-control features as well as the suspension of private trading in grain. As such, it represents the latest effort of Argentina to cope with a problem confronting most countries that produce large surpluses of grain for export. The evolution of the price-guaranteeing policy from its beginning in 1933 to November 14, 1941, and the heavy financial costs that the policy has involved are reviewed in this article.

In brief, the development of the Argentine Government's grain price-guaranteeing policy has included the following stages:

(1) In 1933, as the agent of the Government, the Argentine Grain Regulating Board (Junta Reguladora de Granos) undertook to establish minimum basic prices for wheat, flaxseed, and corn, buying at these prices all grain offered by producers and selling it wholly for export at world prices. It proposed to meet any losses sustained in these transactions from profits obtained from the Nation's exchange-control system. Losses accumulated through 1936, when the Board's operations were suspended, were considerably less than profits from the Exchange-Control Fund, in part because of the improving world supply and price situation.

(2) By 1938, however, the situation was such that the Argentine Government decided again to set minimum prices on wheat and flaxseed of the 1938-39 crops. The purpose of these prices, according to the authorizing legislation, "was to safeguard costs of production" of these grains. The executive decree establishing these prices did not limit the Board to purchases for export alone, and under it the Board for the first time disposed of some of its wheat holdings in the domestic market through compulsory purchases by Argentine millers. In this phase of the program, too, the Government first was faced with the problem of dealing at the same time with accumulated stocks and with prospective heavy new crops.

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(3) On September 9, 1940, the Board was authorized to establish prices and make purchases of corn and to dispose of some of its corn holdings in the domestic as well as in the foreign market. Authorization for similar operation in wheat and flaxseed was given on November 20, 1940. The decrees also prohibited grain-price quotations lower than the established basic prices on the grain exchange and market, and the Board assumed exclusive control of wheat sales to domestic millers at a premium over the basic price paid to producers. Another new factor in the program was provision for a form of production control over wheat. Producers' sales of wheat and flaxseed to the Board were made conditional upon the producers' agreement not to increase their planted acreage and to reduce it by as much as 10 percent if required to do so. Before the end of 1940 the Board extended its control to barley.

(4) On November 14, 1941, facing a critical situation of surplus grain stocks and vanished foreign markets, the Argentine Grain Board established a virtual state monopoly of the grain trade, as a major means of implementing its price-pegging policy. It established basic minimum prices for wheat and flaxseed of the 1941-42 crops. No new season prices for corn, barley, and sunflower seed were announced at that time. The Board renewed the acreage-control provision of the program; and at the same time operations on the futures markets for wheat, flaxseed, and sunflower seed were suspended, and grain-exchange and market-price quotations on wheat and flaxseed below those fixed by the Board were prohibited. Furthermore, the Board assumed entire control of export sales of wheat, flaxseed, and sunflower seed, as well as of domestic sales of wheat and flaxseed.

INAUGURATION OF THE PRICE GUARANTY

At about the close of 1933 the general economic situation in Argentina was causing the Government grave concern. A sharp decline in world prices of the commodities that Argentina produces for export had resulted in a sharp decline in the monetary value of Argentina's agricultural production. For some products, such as wheat and corn, market prices did not cover costs of production. The purchasing power of farm and ranch operators was so restricted that the whole national economy was seriously endangered.

Because of these conditions the Government on November 28, 1933, issued decrees establishing the policy of pegging grain prices to producers and setting up the Grain Regulating Board to execute this policy.

Minimum basic prices of wheat, flaxseed, and corn to producers were to be fixed periodically, "taking into consideration the [market-price] quotations ruling on each date and the increase corresponding to the higher value of exporters' bills." At these prices the Grain Board[1] was to buy all the grain offered and to sell it for export only, at world market prices. Precaution was taken lest charges of dumping be made against the country. In its operations, however, the Board was not to accumulate stocks for speculative purposes but was "to sell continually to exporters, without forcing sales with reduction in prices, and continually following the trend of world market quotations."

[1] In accordance with this decree establishing the Grain Board, to be appointed by the President and presided over by the Ministry of Agriculture, a separate decree the same day appointed 14 persons to membership - among them representatives from the Ministry of Agriculture, the Bank of the Nation, the Argentine Rural Society, and the Chamber of Commerce.

The Government believed that it could accomplish its purposes without recourse to production control, even though the country was on an export basis for the grains concerned. The Board itself later expressed this idea clearly when it said:[2]

> The quantities purchased should be placed on the international market in accordance with the demands of that market, without forcing sales by a reduction in prices. Sales in this fashion signify no speculative intent; on the contrary, purchases should be liquidated before new harvests *** A liquidation with loss is preferable to a situation where new funds are being advanced constantly to finance new stocks and support prices. A policy of this [latter] kind requires two things: production control and a monopoly of demand and no country can lay claim to such advantages where grain is concerned.

For the better execution of this price-guaranteeing policy - to take care of the Board's operating expenses and possible losses, to facilitate grain exportation, and to apply toward the servicing of the country's foreign debt - the Government on the same day (November 28, 1933) devalued the peso by an amount officially estimated to be about 20 percent,[3] and modified the Nation's exchange-control system so that a substantial profit would accrue to the Government from its exchange-control activities. It was made clear that the expenses and any possible losses of the Board were to be covered "out of the resources of the Exchange Fund, constituted by the margin between the prices of purchase and sale of the available exchange," and in no case were these expenses and losses to exceed the amount of that fund.

Because of controversies that subsequently arose over the Government's use of the Exchange Control Fund, one further point should be noted. In the decree establishing the Grain Board and minimum producers' prices, the Government pointed out that-

> the margin existing between the purchase and selling rates of foreign currencies is obtained by assigning to bills of exportation of our agricultural and pastoral products (and therefore to the price of those products) a rate lower than that which really would correspond given their international price and real value of those currencies.

Such being the situation, the Government concluded that-

> it is a matter of strict equity to devote that margin [the Exchange Control Fund] to covering possible differences between the basic purchase price of grain and that of its sale on the international market.

FIRST OPERATIONS OF THE GRAIN BOARD

This price-pegging policy of the Government was well executed by the Grain Board in its first campaign to aid producers. Basic prices, as shown below, based on deliveries at the port of Buenos Aires, were made effective as of November 29, 1933. The tabulation below also shows the relation of these basic prices to officially calculated costs of production.

[2] ARGENTINA MINISTERIO DE AGRICULTURA. MEMORIA DE LA JUNTA REGULADORA DE GRANOS CAMPAÑA 1933-1934. Buenos Aires. 1935. (Translated from p. 28.)

[3] One student recently has pointed out that the devaluation, depending upon the basis of calculation used, actually varied between 26 percent and 43 percent. (SALERA, VIRGIL. EXCHANGE CONTROL AND THE ARGENTINE MARKET. 283 pp. New York. 1941. See p. 98.)

TABLE 1.—*A detailed summary of the operations of the Argentine Grain Board beginning with the 1933-34 campaign and concluding with the 1938-39 campaign*

WHEAT: 1933-34 CROP

YEAR AND MONTH	PURCHASES	CANCELLATIONS	SALES	END OF MONTH STOCKS	MINIMUM BASIC PRICE OF PURCHASES DELIVERED ON DOCK AT BUENOS AIRES	AVERAGE DAILY PRICE OF SALES FOR EXPORT	PROFIT (+) OR LOSS (-) ON SALES
	Bushels	*Bushels*	*Bushels*	*Bushels*	*Paper pesos per quintal*	*Paper pesos per quintal*	*Paper pesos*
1933 December	20,996,978	99,207	1,035,096	19,862,674	[1] 5.75	[2] 5.32	
1934 January	55,579,913	296,115	17,532,192	57,614,261	5.75	[2] 5.32	
February	34,000,664	62,305	10,666,751	80,663,888	5.75	[2] 5.25	
March	15,563,631	110,561	17,454,516	76,662,442	5.75	[2] 5.27	
April	14,424,624	123,676	5,868,351	87,095,037	5.75	[2] 5.19	
May	6,402,636	130,035	42,370,244	50,997,395	5.75	[2] 5.30	
June	371,546	997,618	5,023,475	45,347,850	5.75	[2] 5.75	
July	23,332	472,482	13,070,412	31,828,266	5.75	[2] 6.03	
August	5,328	260,400	3,786,605	27,784,610	5.75	[2] 7.49	
September	735	158,564	7,039,966	20,586,775	5.75	[2] 6.58	
October	-	4,225	6,654,642	13,927,707	5.75	[2] 6.23	
November	49,603	-	7,635,553	6,141,758	5.75	[2] 5.64	
December	-	-	4,241,634	1,699,924	5.75	[2] 5.64	
1935 January	-	-	1,699,924	-	5.75	[2] 5.72	
Total	147,418,992	2,735,210	144,683,781				5,760,947.47 (-)

WHEAT: 1935-36 CROP

1935 December	14,697	-	14,697	-	[3] 10.00	Nominal	
1936 January	1,112,809	-	-	1,112,609	10.00	do.	
February	6,726,235	32,334	-	7,806,709	10.00	do.	
March	3,492,711	135,069	166,934	10,975,417	10.00	do.	
April	4,534,626	5,401	77,161	15,427,680	10.00	do.	
May	5,711,861	176,625	-	20,962,917	10.00	8.60	
June	1,693,631	122,980	1,694,823	20,635,638	10.00	6.625	
July	220	244,490	7,235,661	13,356,667	10.00	10.30	
August	257	17,159	763,682	12,554,903	10.00	11.60	
September	-	2,369	6,644,230	3,706,264	10.00	10.56	
October	-	-	2,766,357	921,927	10.00	10.61	
November	-	-	921,927	-	10.00	10.60	
Total	23,267,447	736,447	22,547,692				[4] 4,621,000.00 (+)
December					Suspended [5]	-	

WHEAT: 1936-39 CROP [6]

1938 November	7,175,054	44,092	-	7,130,962	[7] 7.00	-	
December	63,509,659	96,194	914,909	89,618,312	7.00	-	
1939 January	74,340,949	226,653	13,449,603	150,293,276	7.00	[2] 5.47	
February	44,164,384	295,233	2,682,520	191,479,633	7.00	-	
March	30,075,373	135,215	26,529,311	194,666,050	7.00	[2] 5.35	
April	14,671,961	164,463	29,736,915	179,661,340	7.00	[2] 5.35	
May	11,231,649	322,055	25,763,566	164,798,862	7.00	[2] 5.44	
June	10,086,412	350,384	4,331,468	170,190,966	7.00	[2] 5.35	
July	15,449,580	364,676	8,530,569	176,745,279	7.00	[2] 5.04	
August	7,216,742	259,261	25,416,707	156,266,053	7.00	[2] 4.76	
September	427,966	1,661,974	24,015,002	133,044,412	Suspended [8]	[2] 5.40	
October	107,511	281,491	13,640,465	119,222,452	do.	[2] 6.01	
November	100,126	62,023	27,651,620	91,595,636	do.	[2] 6.08	
December	110	117,983	16,641,069	72,649,169	do	[2] 7.25	

1940	January ..	-	173,686	11,091,783	61,829,476	do.	[2] -		
	February .	-	105,012	8,865,983	52,614,065	do.	[2] 7.04		
	March	-	82,709	14,540,990	37,990,328	do.	[2] 7.01		
	April	-	3,234	15,428,085	22,505,291	do.	[2] 7.80		
	May	-	23,185	6,180,339	16,355,523	do.	[2] 7.99		
	June	-	-	6,148,188	10,207,335	do.	[2] 7.56		
	July	-	-	4,432,973	5,774,215	do.	[2] 6.76		
	August ...	-	147,157	3,846,292	1,780,214	do.	[2] 7.26		
	September .	-	15,690	1,556,448	208,077	do.	[2] 7.39		
	October ..	-	-	208,077	-	do.	-		
	Total ..	298,559,716	4,932,572	293,627,144				[6]	96,864,386.51(-)
				CORN: 1933-34 CROP					
1933	December .	5,790,264	154,715	1,305,595	4,329,952	[9] 4.40	-		
1934	January ..	157,550	194,752	4,292,750	-	4.40	-		
	Total ..	5,947,814	349,466	5,598,345					105,909.60 (-)
				CORN: 1934-35 CROP					
1935	July	2,650,480	78,736	2,493,009	78,736	[9] 4.40	4.40		
	August ...	28,086,919	32,163	4,621,787	23,511,705	4.40	4.35		
	September .	12,675,387	603,549	33,875,647	17,078,957	4.40	4.47		
	October ..	162,983	125,426	1,689,550	55,902	4.40	4.485		
	November .	15,225,558	7,874	-	15,273,587	4.40	-		
	December .	13,784,380	469,895	15,973,626	12,614,446	4.40	4.45		
1936	January ..	767,240	84,011	3,618,024	9,679,651	4.40	4.34		
	February .	1,098,993	27,439	9,508,834	1,242,371	4.40	4.38		
	March	1,968	-	808,931	435,408	[10] 5.00	4.68		
	April	-	-	435,408	-	5.00	4.80		
	Total ..	74,453,908	1,429,093	73,024,816					702,415.83 (-)
				CORN: 1935-36 CROP					
1936	March	47,241	-	-	47,241	5.00	4.68		
	April	2,579,972	-	2,355,576	271,638	5.00	4.86		
	May	11,100,672	110,230	1,104,426	10,157,655	5.00	4.87		
	June	8,765,923	313,959	10,863,245	7,746,374	5.00	4.89		
	July	639,177	1,626,758	4,487,030	2,271,762	5.00	5.41		
	August ...	-	72,634	1,174,383	1,024,745	5.00	6.16		
	September .	394	450,408	574,731	-	5.00	5.79		
	Total ..	23,133,379	2,573,989	20,559,391				[4]	322,000 (+)
				LINSEED: 1933-34 CROP					
1933	December .	-	-	-	-	[11] 11.50	-		
1934	January ..	19,212	-	17,794	1,418	11.50	-		
	February .	1,102	1,102	-	-	11.50	-		
	March	-	-	1,417	-	11.50	-		
	April	-	-	-	-	11.50	-		
	May	-	-	-	-	11.50	-		
	June	-	-	-	-	11.50	-		
	July	-	-	-	-	11.50	-		
	August ...	-	-	-	-	11.50	-		
	September .	-	-	-	-	11.50	-		
	October ..	-	-	-	-	11.50	-		
	November .	53,934	3,031	50,903	-	11.50	-		
	Total ..	74,248	4,133	70,114		11.50	-		1,844.83 (+)

TABLE 1.—*A detailed summary of the operations of the Argentine Grain Board beginning with the 1933-34 campaign and concluding with the 1938-39 campaign*—Continued

LINSEED: 1934-35 CROP

YEAR AND MONTH	PURCHASES	CANCELLATIONS	SALES	END OF MONTH STOCKS	MINIMUM BASIC PRICE OF PURCHASES DELIVERED ON DOCK AT BUENOS AIRES	AVERAGE DAILY PRICE OF SALES FOR EXPORT	PROFIT (+) OR LOSS (-) ON SALES
	Bushels	*Bushels*	*Bushels*	*Bushels*	*Paper pesos per quintal*	*Paper pesos per quintal*	*Paper pesos*
1935 July	3,937	-	3,937	-	[11] 11.50	-	
August	-	-	-	-	11.50	-	
September	-	-	-	-	11.50	-	
October	-	-	-	-	11.50	-	
November	-	-	-	-	[12] 11.50	-	
December	64,957	-	64,957	-	14.00	-	
Total	68,894	-	68,894	-			3,275 (+)

LINSEED: 1935-36 CROP

1936 March	39,014	-	3,937	35,077	[12] 14.00	Nominal	
April	373,247	11,810	-	396,513	14.00	do.	
May	4,309,363	4,645	-	4,701,231	14.00	do.	
June	531,978	9,370	-	5,223,639	14.00	do.	
July	1,063	2,323	715,668	4,506,911	14.00	15.16	
August	39	118	354,232	4,152,600	14.00	15.72	
September	39	-	527,017	3,625,622	14.00	14.78	
October	332,895	-	49,879	3,908,638	14.00	14.04	
November	1,569,281	8,740	1,084,821	4,384,359	14.00	13.85	
December	48,698	3,346	4,429,711	-	Suspended[5]	13.72	
Total	7,205,617	40,352	7,165,265				[4] 271,000 (+)

LINSEED: 1938-39 CROP[7]

1938 December	15,747	-	-	15,747	[7] 13.00	-	
1939 January	27,558	-	-	43,305	13.00	-	
February	-	-	43,305	-	13.00	-	
Total	43,305	-	43,305				552.77 (+)
1939 September					Suspended[8]		

FINANCIAL RESULT OF ABOVE OPERATIONS[13]

CAMPAIGN		PROFIT (+) OR LOSS (-) *(Paper pesos)*
1933-34	(Wheat, (Corn, (Linseed	(8,882,535.26 (-)[14]
1934-35	(Corn, (Linseed	(
1935-36	(Wheat, (Corn, (Linseed	(1,953,760.00 (+)[15]
1938-39	(Wheat, (Linseed	(123,769,977.22 (-)[16]

[1] Basis 80 kilograms per hectoliter, average quality on wagon at dock, Buenos Aires, with appropriate price differentials for deliveries at other ports, as decreed November 28, 1933.

[2] No. 2 wheat.

[3] As established on December 12, 1935, for average quality, basis 80 kilograms per hectoliter.

[4] As estimated officially in round numbers.

[5] By decree December 2, 1936.

[6] These detailed figures are based on the Memoria de la Junta Reguladora de Granos Campaña 1938-1939, Buenos Aires, 1941. The profit and loss estimates were calculated as of August 31, 1940, before operations were completed in detail. It is to be noted that these figures differ slightly from later but less detailed figures shown in Table 4.

[7] As established November 14, 1938.

[8] By decree September 6, 1939.

[9] Sound, dry, average quality, as decreed November 28, 1933.

[10] Decreed March 21, 1936.

[11] 4 percent foreign substances, average quality, as decreed November 28, 1933.

[12] As established on December 12, 1935, 4 percent foreign substances, average quality.

[13] Grouped as reported by the Grain Board.

[14] In addition to the profits and losses on 1933-34 sales itemized in this tabulation, the Board's administrative expenses until June 30, 1935, totaled 791,824.17 pesos, and interest charges by the Bank of the Nation were 2,511,876.23 pesos, whereas commissions earned by the Board netted a profit of 306,177.38 pesos.

[15] In addition to the profits and losses on the individual crops itemized, this estimate as of December 31, 1936, includes among other lesser items 588,930.28 pesos for general expenses and 591,170.83 pesos in commissions to the Bank of the Nation. For further details on operations in crops covered by this item see "La Junta Reguladora de Granos, Piedra Fundamental de La Reacción Economía Argentina," pp. 3098-3104 of Cuadernos de Comentarios E Informaciones Autorizadas de La Administración Nacional, Buenos Aires, March 15, 1937.

[16] In addition to the profits and losses on the individual crops itemized, this estimate as of August 31,1940, includes 1,099,303.18 pesos for general expenses and 19,866,883.76 pesos in interest and commissions to the Bank of the Nation.

PRICE DESCRIPTION	WHEAT[1]		CORN[2]		FLAXSEED[3]	
	Paper pesos per quintal[4]	*Cents per bushel*[4]	*Paper pesos per quintal*[4]	*Cents per bushel*[4]	*Paper pesos per quintal*[4]	*Cents per bushel*[4]
Established Grain Board price	5.75	52.2	4.40	37.3	11.50	97.4
Prevailing market price, November 28, 1933	5.00	45.4	3.78	32.0	10.40	88.0
Cost of production 1933-34 crop[5]	6.01	54.5	4.17	35.3	8.13	68.8

[1] 80-kilograms-per-hectoliter basis, average quality.
[2] Sound, dry, average quality.
[3] 4 percent of foreign substances, average quality.
[4] Converted into United States currency at approximately the official Argentine export rate of exchange for December 1933. Table 2 shows the value of the Argentine paper peso in terms of United States money, by months, throughout the period 1933-41. A quintal (100 kilograms) is equivalent to approximately 3.674 bushels of wheat and 3.937 bushels of corn and flaxseed.
[5] Average for whole cereal (or linseed) zone, based on normal yields, delivered at port.

Because world prices for corn and flaxseed, as reflected in Buenos Aires, remained above the Board's price during most of the first year of the Board's life, operations in these commodities were relatively insignificant, representing 2.8 and 0.1 percent, respectively, of the exportable surpluses of corn and linseed (table 1).

TABLE 2.—*Value of the Argentine paper peso in terms of United States currency, 1933-41*[1]

YEAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1933	-	-	-	-	-	-	-
1934	33.5007	33.5494	33.9553	34.3475	34.0413	33.6552	33.6077
1935	32.6038	32.4607	31.8033	32.2220	32.5572	32.8687	33.0262
1936	33.0742	33.3291	33.1346	32.9541	33.1114	33.4181	33.4887
1937	32.7180	32.6267	32.5695	33.7742	32.9281	32.8980	33.1073
1938	33.3339	33.4513	33.2332	33.2084	33.1175	33.0534	32.8622
1939	31.1261	31.2362	31.2341	31.2066	31.2103	31.2167	31.2108
1940	29.7723	29.7733	29.7733	29.7733	29.7733	29.7733	29.7733
1941	29.7733	29.7733	29.7733	29.7733	29.7733	29.7733	29.7733

YEAR	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ANNUAL AVERAGE
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1933	-	-	-	-	33.3311	32.0300
1934	33.7661	33.2904	32.9458	33.2625	32.9513	33.5793
1935	33.1204	32.8563	32.7140	32.8152	32.8542	32.6585
1936	33.5027	33.6112	32.6672	32.5825	32.7184	33.1370
1937	33.2060	33.0198	33.0324	33.3089	33.3119	32.9590
1938	32.5406	32.0319	31.7925	31.3818	31.1349	32.5970
1939	31.1158	[2] 28.61	29.7703	29.7724	29.7732	30.6235
1940	29.7733	29.7733	29.7733	29.7733	29.7733	29.7730
1941	29.7733	29.7733	29.7733	29.7733	29.7733	29.7733

[1] Noon buying rates for cable transfers of Argentine paper pesos in New York City.
[2] Estimated.
Federal Reserve Board.

Operations in wheat, on the other hand, were much more extensive, embracing three-fourths of the exportable surplus of the crop, as world prices for several months continued below the Board's guaranteed price. Until the end of May, by which time 99 percent of the purchases and 67 percent of the sales had been completed, losses were heavy. After that time, reports of poor crop prospects in North America caused world prices to rise; and the Board was able to sell its remaining stocks at profitable prices (table 1). The end result was a net loss on wheat of about 5,780,950 pesos ($1,941,200).[4]

[4] Converted at annual average exchange rate for 1934.

TABLE 3.—*Financial transactions of the Grain Regulating Board (balances at end of months)*

MONTHS	BORROWED FROM THE BANK OF THE NATION			PROCEEDS FROM SALE OF MERCHANDISE[1] (ACCUMULATIVE)	BALANCES
	ADVANCES TO SELLERS OF GRAIN	ADVANCES TO THE BOARD FOR THE PAYMENT OF MERCHANDISE (ACCUMULATIVE)	TOTAL ADVANCES (ACCUMULATIVE)		
	1,000 paper pesos	*1,000 paper pesos*	*1,000 paper pesos*	*1,000 paper pesos*	*1,000 paper pesos*
1933:					
December	9,334	83	9,417	202	9,215
1934:					
January	34,529	17,958	52,487	6,765	45,722
February	49,927	41,620	91,547	29,493	62,054
March	52,843	64,166	117,009	49,384	68,625
April	45,478	99,124	144,602	60,838	83,764
May	41,297	117,418	158,715	86,067	72,648
June	22,101	148,869	170,970	109,966	61,004
July	6,893	172,586	179,479	130,723	48,756
August	1,132	184,661	185,793	142,088	43,705
September	368	188,128	188,496	154,082	34,414
October	58	188,565	188,623	164,739	23,884
November	46	188,620	188,666	173,603	15,063
December	12	188,824	188,836	180,573	8,263
1935:					
January	-	189,456	189,456	183,562	5,894
February	-	189,457	189,457	183,572	5,885

[1] Part of the plan as originally decreed was that the Bank of the Nation was to advance to sellers 80 percent of the purchase price of their grain and charge the Board for interest on these advances. Sellers were to receive from the Board the remainder of the amount due them when the grain was sold.

Everything considered, the Board's operations for the 1933-34 campaign netted a loss of 8,882,500 pesos ($2,982,700). Profits from the Exchange Control Fund as of September 30, 1934, aggregated about 91,200,000 pesos ($30,624,300), or many times more than enough to meet the losses sustained on the grain operations. But the significant fact to be learned from these operations is that chance helped to minimize the Grain Board's losses. Had it not been for bad North American weather conditions, losses in wheat operations alone probably would have approximated the 50,000,000 pesos originally expected by the Government.[5]

[5] Simon G. Hanson, an Argentine scholar, concludes his appraisal of the first year of the Board's operations, in these words:

It assured the producer of a fair price for his grain at a time when the market was weak and uncertain. It left him free to speculate on a rise in prices with the knowledge that he could at any time cover his costs of production by selling to the government. It reduced the margin between port and farm prices to a minimum by establishing and giving wide publicity to its buying prices at every railway station. It maintained internal prices at a higher level than would have prevailed otherwise; in the main period of purchasing, exporters were buying from the Board at $5.20 [5.20 pesos] to $5.30; in the absence of the Grain Board the producer would not have received more than that and probably would have received less, since the Board acted also to maintain world-prices by holding back its purchases; instead, the Board paid him $5.75. Sales of the Board were well executed: it did not press its sales when the market was weak but sold freely when the market improved, without speculating on a continuance of the improvement until large profits could be made. Its expenses of operation were not excessive * * * its interference with existing organizations was minimized, and its arrangements generally economical; the arrangement with exporters to receive and store the grain bought enabled it to accept prompt deliveries from farmers and to market the stocks when most convenient. In short, it cleared the country of the crops at a remunerative price to the farmer, and suffered only a small loss on the tremendous turnover. However, it should be noted again that the chief factor in the minimizing of losses was wholly one of chance - the disastrous weather conditions in North America; without that *desgracia con suerte* (lucky misfortune) the loss on the wheat business would probably have touched the original estimate of $50,000,000. [HANSON, SIMON G. THE ARGENTINE GRAIN BOARD. Jour. Polit. Econ. 44:240-247. 1936.]

For a thorough account of these operations, see reference cited in footnote 2.

Recognition of this element of chance nowise caused the Government to recede from its policy of guaranteeing producers' prices. Throughout 1934 the Board was busy disposing of its stocks of old wheat. During the second half of 1935, with the export price of corn fluctuating around the basic price, some purchases of 1934-35 corn were made, on which it sustained a loss of 700,000 pesos (table 1).

The chief interest of the Board's operations in 1935 lay in the fact that, upon the plea that economic conditions made such action necessary, the Board on December 12 raised the basic prices of wheat and linseed to 10.00 pesos and 14.00 pesos per quintal (89.4 cents and $1.17 per bushel),[6] respectively. In some quarters political reasons are believed to have dictated the move.[7] Whereas the basic price established in 1933 for wheat was somewhat below officially estimated costs of production, those prices guaranteed for wheat and flaxseed in 1935 are believed to have been above such costs. The significant fact is that, despite the high basic prices, the prevailing market prices during most of the season were still higher, and the Board purchased only a limited quantity.

On March 21, 1936, the peg on corn was raised from 4.40 pesos (37 cents) to 5.00 pesos per quintal (42.1 cents per bushel). Toward the middle of the year, a gradual increase in the value of agricultural products began, owing to a number of diverse factors of international character. As the year wore on, this trend made itself felt on Argentine wheat and flaxseed; and the Government felt that the time had come to suspend its guaranteed prices on those crops, believing that producers no longer needed this form of aid. On December 2, 1936, the price peg for these grains was formally removed. The corn price peg was removed the following January.

Thus, at the close of 1936, with a comparatively favorable outlook ahead for Argentine agricultural producers and a profit of approximately 1,950,000 pesos ($641,500) to its credit on its 1935 and 1936 crop operations (table 1), the Grain Board virtually retired from the picture. As regards the Board's report for 1936, an official publication of the Government[8] stated:

> The present Report reviews the final activities and operations of this agency, which - in the short space of three years - has been able to accomplish a delicate and important mission, executed with the general approval of public opinion and, above all, for the well-being of the Nation.

While the Board did perform its functions during the period in the manner described, it had not faced the real tests that later were to present themselves and were to necessitate considerable expansion of Government control over the grain trade.

[6] These prices were for average quality wheat, 80-kilograms-per-hectoliter basis, on dock at the port of Buenos Aires, and for average quality linseed, 4-percent tolerance.

[7] In the decree establishing these prices, the Government listed a number of considerations as prompting its action, among them a decrease in the seeded acreage of that harvest, crop losses due to drought and locust damage, and the fact that existing relatively low market prices were not truly representative of the crop situation. For a more lengthy explanation of the Government's action see a copy of the communication given the Argentine press on December 14 and printed in Memoria de la Junta Reguladora de Granos, 1935, Appendix II, pp. 27-31.

[8] [ARGENTINE GOVERNMENT.] LA JUNTA REGULADORA DE GRANOS, PIEDRA FUNDAMENTAL DE LA REACCIÓN ECONÓMICA ARGENTINA. *In* Cuadernos de Comentarios E Informaciones Autorizadas de la Administración Nacional, p. 3103. Buenos Aires. 1937.

SITUATION IN 1938

By 1938 agricultural producers in Argentina again were experiencing economic "jitters," and understandably so. Cereal and flaxseed prices had declined sharply, and world quotations were not sufficient to cover Argentine producers' cost of production. In an effort to instill confidence among farmers, the Argentine Congress authorized the President on September 30, 1938, in case he deemed it necessary-

> for the defense of national production, to establish minimum prices for wheat, linseed, and corn, or to grant subsidies to producers of these cereals, in the form and by the methods deemed necessary.

These minimum prices (or subsidies), according to the Congress, were to be such as would insure (salvaguardar) cost of production. The resources of the Exchange Control Fund were to be used in executing this law; and if these proved insufficient, the Bank of the Nation was to advance the necessary funds. The law specified, however, that the price guaranties were to apply only to the oncoming harvests.

The Grain Board immediately was reorganized to execute the Government's policy and on November 14 established minimum prices of wheat and flaxseed from the 1938-39 crops at 7.00 pesos and 13.00 pesos per quintal (59.8 cents and $1.04 per bushel), respectively.[9] In decreeing these basic prices the Executive Government felt that-

> following the example of other producing countries, it should aid domestic farmers, in the same fashion as has been done formerly in analogous situations, fixing a basic price that affords costs of production and provides a sure and solid basis for the orderly development of the [grain] industry.

In the evolution of the price-pegging policy as revealed in the laws and decrees of 1938, there occur for the first time (1) the provision limiting the minimum prices to one given year's harvests and (2) statements connecting the basic prices directly with costs of production.[10] Furthermore, these 1938 laws and decrees apparently did not limit the Board to purchases for export alone.

With price pegging once more in effect and the Government committed to a policy basically the same as that of 1933, the Grain Board began purchases on November 21, 1938 - only a week after the new basic prices were decreed.

As the market price for flaxseed throughout the lifetime of this pegging operation was above the minimum basic price, only an insignificant amount of this commodity was purchased (table 1).

For wheat, however, the story is different. Unusually large harvests in Argentina and most other surplus-producing countries, coupled with the war crisis of 1939, kept the Argentine market price from exceeding the minimum basic price. As a result the Board was forced to purchase 298,559,716 bushels, which was more than total requirements for domestic utilization and export during the marketing season 1939. These purchases began in November 1938, a week after the establishment of the basic price, and about two-thirds of them were made in December, January, and February.

[9] This price was for No. 2 wheat, 78-kilograms-per-hectoliter basis, at the port of Buenos Aires. Appropriate price differentials were provided for deliveries at other ports.

[10] While no thoroughly reliable cost-of-production estimates for all years since 1933 are available, it is believed that (1) the basic price of 1933-34 wheat, at least, was somewhat below production costs; (2) the basic prices provided in the decree of December 12, 1935, were above these costs; and (3) in more recent years basic prices have tended to be below these costs - as low as the Government felt they could be placed without inviting repercussions.

In handling these large quantities of wheat the Board[11] uniformly maintained the fundamental position that-

> the outflow of grain was not to be obstructed by the matter of prices, so long as these prices were naturally in line with world quotations. To this end, it [the Board] concentrated its attention unceasingly and undividedly on fluctuations in the market in order to keep its selling prices in line with existing demand and to lose no opportunity for disposing of any portion of its considerable stocks on hand.

Notwithstanding this liberal criterion of action, however, the Board throughout the period of this operation was beset constantly with the harassing problem of how and when to dispose of its heavy purchases.

On September 6, 1939, with the development of the war crisis, the Government abolished minimum basic prices, on the ground that advances in quotations on wheat were due to war speculation rather than real values, whereas the market price of flaxseed remained above the basic price. But at that time substantial stocks of wheat still were held by the Board (table 1), because of the sluggishness of the export market, and new crops were already in prospect. This was the Board's first experience in trying to deal with a new crop at a time when substantial stocks of the old crop still were on hand.

Furthermore the Board, for the first time, entered the domestic as well as the export market for wheat, in an effort to unload some of its stocks and make room for the new crop. In a decree issued October 10, 1939, the Government ordered domestic millers to purchase from the Grain Board all the supplies they needed for milling up to November 30 of the ensuing year.[12] In part to offset the Board's losses domestic millers were to pay 7.00 pesos per quintal for their purchases.

Not all stocks of this 1938-39 wheat were finally disposed of by the Board until September 1940. By this time total loss on the wheat and linseed operation (table 1), according to an official statement of August 31, 1940, aggregated 123,770,000 pesos ($36,850,400).[13] It doubtless would have been considerably more had the 1939-40 Argentine crop not been a short one.

The explanation for the financial loss in this costly operation is given best in the words of the Grain Board itself.[14] The Board simply was trying to deal with a problem "the solution of which * * * was beyond the reach of the organization, as factors directly linked to the [wheat-taking] capacity of the international market intervened."

RECENT DEVELOPMENTS

Clear recognition of this fact - that factors beyond its control were thwarting its efforts - by no means caused the Government to forego its price-pegging policy. By September 1940 Argentina was headed full into a grain crisis caused by the war and the loss of foreign markets. Grain producers needed Government aid as never before; and national well-being demanded that agricultural producers be sustained in the

[11] ARGENTINA MINISTERIO DE AGRICULTURA. MEMORIA DE LA JUNTA REGULADORA DE GRANOS CAMPAÑA 1938-1939. Buenos Aires. 1941. (Translated from p. 19.)

[12] This decree was modified subsequently (December 15) so that millers were required to purchase only 40 percent of their requirements for the year ending November 30, 1940.

[13] Converted at August 1940 rate of exchange.

[14] Translated from p. 19 of the reference cited in footnote 11.

crisis. Although the Government had abandoned hope of avoiding heavy financial losses and was directing its efforts primarily toward minimizing such losses, it stood fast upon its original intention to aid agricultural producers through minimum-price guaranties. Final statistical details of the results of the Board's more recent operations under this policy are not as yet available.

Loss of the export market for corn in the Low Countries, Denmark, and Norway, following Nazi occupation of those countries, prompted the Argentine Government in 1940 to take drastic steps to protect corn producers. Following the passage of a law authorizing the purchase of the 1939-40 crop, an executive decree was issued September 9, 1940, empowering the Grain Board to purchase corn from that harvest at 4.75 pesos a quintal (35.9 cents a bushel).[15] Purchases of shelled corn were to be limited to a period of 15 days following issuance of the decree; ear corn was to be bought until November 30.

Adopting the method used for the first time in connection with the preceding year's wheat crop, the Board was to dispose of some of its stocks in the domestic market as well as the foreign market. A National Fuel Commission was established (October 2) to promote the consumption of corn as fuel. A short time later (November 18) the Board was authorized to sell fuel corn to organizations authorized by the Fuel Commission to make purchases.[16] Adoption of this method of disposal is significant as illustrating the lengths to which the Government was prepared at this time to go, while clinging to its basic policy.

With the progress of the war the flurry in the wheat and flaxseed markets, noticeable at the start, subsided, and the dark outlook for grain exports grew even darker. Because there could be no question that wheat and flaxseed producers would need aid in disposing of their crops, the Government on November 20, 1940, decreed the purchase of wheat and flaxseed at basic prices to begin as of December 1. The decree made no limitation as to the year's harvest to which these prices applied. Wheat was pegged at 6.75 pesos a quintal (54.7 cents a bushel)[17] instead of at 7.00 pesos, the price established for the preceding year. The basic price of flaxseed was established at 9.25 pesos a quintal (70 cents a bushel), instead of 13.00 pesos, the price for the preceding crop.

On this occasion the Government did not content itself with announcing the establishment of new prices, in continuation of its long-established policy. The Ministry of Agriculture took occasion in a press statement to call attention to the difficult times, the poor prospect for exports, the Government's responsibilities, and the large losses suffered by the Grain Board on its 1939-40 corn-crop operations. (See table 4.) "Under these circumstances," ran an enlightening part of this statement, "the establishment of minimum prices can be done only to help the country in the form of social aid to producers."

[15] This basic price was for corn in good condition, shelled, sacked, and delivered at the port of Buenos Aires, with appropriate price differentials for ear corn and deliveries at other ports.

[16] Ear corn was to be delivered to railroads, at station of origin, at 20 pesos per metric ton; to powerhouses and factories, on cars at station of destination, at 23 pesos; and shelled corn was to be delivered at powerhouses and factories, on cars at station of destination, at 25 pesos per metric ton.

[17] This was for No. 2 wheat, 78-kilograms-per-hectoliter basis, and for deliveries of wheat and linseed at the Port of Buenos Aires, with differentials for deliveries at other ports.

As a further means of implementing its policy, the Government in the basic-price decree assumed greater control than ever before over the production and marketing of grain, placing much of that control in the hands of the Grain Board. From the date of the decree no price quotations below the established basic levels were to be permitted in the grain exchange and market. Further, all sales of wheat to domestic millers in the future were to be made exclusively by the Board at 9.00 pesos per quintal, unless the millers preferred to buy their wheat in the market and pay the Board a premium of 2.25 pesos per quintal, or 33 percent more than the Board paid producers.[18]

This premium was intended to help offset the heavy losses that the Government expected on its wheat purchases destined for export. Assuming an average annual domestic consumption of about 99,207,000 bushels, this expedient could be counted on to raise a gross revenue of approximately 60,750,000 pesos. In effect, it constituted a processing tax destined to help finance the aid to producers and was somewhat analogous to the processing tax applied in the United States under the Agricultural Adjustment Act of 1933. In its press release the Government stated that this-

> extra charge established on wheat destined for domestic consumption will not bring about an increase in the price of bread, as this price is related to the quotations prevailing during a period in which the price of bread has remained unchanged.

Theretofore the Board as a general rule had disposed of its wheat abroad.

Still further, the Board was authorized to enter into agreements with producers binding them (as a condition of selling their wheat and flaxseed to the Board) to agree - if called upon - to reduce their plantings by as much as 10 percent and to agree in any case not to increase these plantings above existing levels. Although it had been viewed in 1933 as unnecessary to the success of the price-pegging policy, production control, accompanied by a processing tax, now entered the picture for the first time as a means of implementing that policy. Though producers were not called upon to reduce their plantings, they were bound (as a condition of selling to the Board) not to increase their plantings; and the threat of having to cut them was held over their heads.

Application of the price-pegging policy was widened on December 12, 1940, to include barley - the first occasion on which this form of Government aid had been extended to any grain besides wheat, flaxseed, and corn. Beginning January 1, 1941, the Board was to purchase new-crop (1940-41) barley only at 4.50 pesos and 5.00 pesos a quintal (29.2 cents and 32.4 cents a bushel), respectively, for feeding and for brewing barley.[19] As for wheat and flaxseed (decree of November 20), production control and a processing tax were provided for in the barley price-pegging decree.[20] Also, further quotations on exchanges and markets below basic prices were forbidden.

As there was no possibility then of exporting that barley crop and as the price guaranty would require an estimated investment of over 30,000,000 pesos ($8,932,000), not counting transportation costs, the Minister of Agriculture, speaking for the

[18] This 33-percent premium was to be paid also on all millers' stocks held on November 20.

[19] These prices were for quality barley on dock at the port of Buenos Aires, with appropriate differentials for deliveries at other ports.

[20] Domestic brewers were to buy directly from the Board at the price of 8 pesos per quintal, giving the Board a profit (or paying a tax) of 3 pesos; or else they were to pay the Board the differential of 3 pesos on their purchases in the market.

TABLE 4.—*A preliminary estimated summary of the operations of the Argentine Grain Board from November 1938 to September 30, 1941*

[As of September 30, 1941]

GRAIN AND YEAR	PURCHASES	SALES	COST OF GRAIN SOLD, INCLUDING EXPENSES	PROCEEDS FROM SALES	PROFIT (+) OR LOSS (-)	ESTIMATED STOCKS ON HAND	AMOUNT DUE BANK OF NATION FOR FINANCING OPERATIONS, ETC.
	1,000 metric tons	*1,000 metric tons*	*1,000 paper pesos*	*1,000 paper pesos*	*1,000 paper pesos*	*1,000 metric tons*	*1,000 paper pesos*
Wheat and linseed: [1]							
1938-39 [3]	[4] 7,600	7,600	[4] 590,300	[5] 492,900 [2]	[6] -97,400	[4] 0	122,700
1939-40 [3]	6,600	2,000	148,000	158,000	+10,000	4,600	306,400
1940-41	-	-	-	-	-	-	-
Corn:							
1939-40 [3]	[9] 5,400	4,200	137,000	[10] 34,000 [7]	[8] -103,000	[8] 1,200	158,600
1940-41	6,800	100	3,000	3,000	-	6,700	99,400
Barley:							
1940-41	680	330	11,000	[11] 3,500	-7,500	350	22,400
Sunflower seed:							
1941	[12] 200	10	1,000	[13] 1,200	+200	190	10,700
Total	27,280	14,240	890,300	692,600	-197,700	13,040	720,200
							[14] 7,000
							727,200

[1] Table 1 gives figures on 1938-39 operations as reported by the Grain Board as of August 31, 1940. Hence, those figures differ somewhat from these, based on the Memoria del Departamento de Hacienda Correspondiente Al Año 1940, p. 99.

Because of the fact that wheat and linseed figures are given jointly and because of the impossibility of making accurate conversions to bushels under these conditions, conversions have not been made from metric tons.

[2] Of this amount, approximately 25,300,000 pesos is still due the Grain Board and has not been paid.

[3] Since the compilation of this summary, the Grain Board has been authorized to destroy all Government-owned 1939-40 wheat and linseed, as well as corn, provided the grain is unsuitable for any use.

[4] Includes 900,000 tons not actually delivered to the Board. The delivery of this involves another 32,000,000-peso investment over and above the 148,000,000 pesos shown in "cost of grain" column.

[5] Of this amount 38,100,000 pesos is still to be collected by the Board.

[6] Results from the sale of wheat to domestic millers at the Board's premium prices and not from sales for export.

[7] About 18,900,000 pesos of this amount was still to be received.

[8] With about 1,200,000 tons of corn still on hand at the time, this loss figure was estimated, and since this corn was likely to be sold at extremely low prices, the official estimate was that the loss on this operation ultimately would approximate 146,000,000 pesos. See footnote 3 above.

[9] Further purchases of 200,000 tons were considered probable.

[10] Only 100,000 pesos of this amount has been collected.

[11] Only 1,700,000 pesos of this amount has been collected.

[12] Additional purchases of 50,000 tons were considered probable.

[13] About 1,000,000 pesos of this amount already received.

[14] For administrative expenses, interest, commissions, etc.

Government, said it regarded the barley-price guaranty as "a true financial sacrifice." For the time being, producers of oats and rye were to be aided by means of Government harvesting loans, until other means of aiding them could be worked out. As these crops were used primarily for pasturage rather than for export, the growers were not felt to be as hard hit as other grain producers.

Early in 1941 the Board took a drastic step in an effort to reduce its heavy stocks of old-crop corn and make storage space available for the expected large new crop. This step is illustrative of the lengths to which the Government was being carried by its policy of guaranteeing prices. On February 5 the Board announced its intention of selling old corn for domestic consumption at theretofore unheard-of low prices. Board-owned ear corn was to be sold at from 0.40 to 1.00 peso a quintal (3.8 cents to 9.5 cents a bushel) depending upon the distance to port from the railroad station nearest the farm on which the corn was stored.[21] Corn purchased at these prices could be put to any desired use, provided it was not exported.

In spite of this drastic step, however, Argentina on April 1, 1941, was faced with a record-breaking corn surplus - the result of a heavy carry-over, a virtually complete stoppage of exports, and a prospective surplus from the new crop. In view of this situation, the Board was authorized on April 3 to buy new-crop corn (1940-41) in cribs[22] from producers at the minimum basic price equivalent of 4.75 pesos a quintal, shelled and delivered at the port of Buenos Aires, the same price as that previously established for the preceding year's crop. This decree did not prohibit exchange and market quotations below the basic price, as had previous decrees. The provision respecting production control was continued.

This basic-price decree, however, brought still another requirement into the picture. As a condition of selling their corn to the Board at the established prices, producers were required to agree to accept the judgment of the Rent Arbitration Commission as to what constituted fair land rents, in case of any dispute between landlord and tenant. The purpose of this condition of sale was to keep rents more nearly in line with the producing value of the land, as that value was reflected in the established basic price. Legally, this move on the part of the Government was superfluous, as the decree establishing the Arbitration Commission[23] had made its decisions binding anyway. But the Government saw some merit in having producers agree to accept these rental decisions as a condition of selling their grain to the Board at the established prices.

In announcing the establishment of the basic prices for 1940-41 corn on April 3, the Government frankly stated that the move represented "a further and special sacrifice on the part of the State," as an investment of 150,000,000 pesos ($44,660,000) was involved and this would "weigh considerably on the economy of the Nation." Other sacrifices, however, were to come.

Continued inactivity in the export trade brought the market quotations of sunflower seed so low that they did not cover the cost of production. As a result, the

[21] These prices were for ear corn, official estimates being that about 70 pounds of ear corn was equivalent to 56 pounds of shelled; Board-owned shelled corn on rail at the port of Buenos Aires was to be offered for 3.125 pesos a quintal, with adjustments for deliveries at other ports. Payment for the corn was required when the sale was made, and the Bank of the Nation was authorized to make special loans to finance these sales.

[22] Only corn in cribs was to be bought, because of uncertain prospects in export markets. A certain type of crib also was stipulated in order to guarantee the good condition of the corn.

[23] No. 68,344, dated July 25, 1940.

Government's policy of guaranteeing minimum prices was extended to this crop on June 7, 1941. Purchases were to begin on June 16, the Board paying 10.50 pesos a quintal for deliveries at the port of Buenos Aires. As was to be expected, the price-establishing decree prohibited price quotations on the grain exchange or in the market below the basic price; it included the requirement respecting land rents; it required processors of the seed to make their purchases from the Board at 12.00 pesos a quintal, or pay the Board a 10-percent premium (or processing tax) for the privilege of buying in the market. Instead of merely holding over producers' heads the threat of a reduction in planted acreage, as had been done in previous instances, this decree provided for a 10-percent reduction in the next year's (1941–42) plantings.[24] The Government's policy of guaranteeing prices was, for the first time, implemented by production control in the form of actual acreage reduction.[25]

DECREES OF NOVEMBER 14, 1941

When the time came (November 14, 1941) for establishing basic prices for the 1941-42 wheat and flaxseed crops, Argentine grain producers and the Grain Board faced a truly critical situation. On the basis of existing stocks and probable surpluses of the new crops, the Government calculated that at the end of 1942 the Board would have on hand 99,207,000 bushels of wheat[26] and 47,242,000 bushels of flaxseed. These estimated probable surpluses were equivalent to about three-fourths of an average (1937-39) year's exports of wheat and considerably more than an average year's exports of flaxseed.[27] They represented to the Government a stagnation of funds amounting approximately to 250,000,000 pesos.[28] In addition, the Government owed an officially estimated 767,500,000 pesos to the Bank of the Nation for advances made in financing the Grain Board from its 1938-39 operations to date. Actual losses on operations - without considering possible losses on the new crops - aggregated nearly 400,000,000 pesos ($119,093,000) as of November 14, according to the Government (table 4).[29]

In the face of this pressing situation the Government on November 14 reaffirmed its policy of guaranteeing minimum prices to producers and further implemented this policy by far-reaching measures. The basic prices of 1941-42 wheat and flaxseed were established at the same levels as for the preceding year's crop. (Previously established prices for corn, barley, and sunflower seed were still technically in effect

[24] Article 5 of this decree declared that: "As the Grain Regulating Board purchases sunflower seed from producers, the Ministry of Agriculture will come to an agreement with the latter to reduce the seedings of their next crop, which reduction will represent 10 percent of the current year's plantings."

[25] As this article goes to press, official Argentine reports indicate that, despite the provision in the minimum-price decree for a 10-percent reduction in 1941-42 plantings, the seeded acreage for this year is substantially larger than for last year.

[26] Later developments indicate a carry-over of 150,000,000 bushels.

[27] Though these estimated end-of-1942 stocks represent some improvement as compared with the end-of-1941 stocks so far as wheat is concerned, they represent one-fourth larger stocks of linseed.

[28] Exclusive of the funds that will be involved in the purchase of the unsaleable portion of the 1942 corn crop.

[29] Critics have pointed out that profits from the Exchange Control Fund would have gone far toward meeting these losses, had they been used primarily for this purpose - as was intended - instead of having been diverted so largely to other uses. From its establishment, on November 28, 1933, to the close of the year 1940, this fund yielded 778,481,100 pesos. Of the total expenditures during the period, aggregating 407,635,600 pesos (and aside from the balance of 370,845,500 pesos remaining in the fund on December 31, 1940), only 30,264,100 pesos went to the Grain Board. (See [ARGENTINA] MINISTERIO DE HACIENDA. MEMORIA DEL DEPARTAMENTO DE HACIENDA CORRESPONDIENTE AL ANO 1940. V. 1. Buenos Aires. 1941.)

on this date.) In Accordance with established precedent, the decree setting these prices also (1) prohibited all quotations in the grain exchange and market below the basic prices; (2) conditioned sales to the Grain Board upon the growers' agreeing to hold the next year's plantings of these crops down to existing levels and to reduce them by 10 percent if called upon to do so; (3) conditioned sales to the Grain Board upon the growers' acceptance of the land-rental decisions of the Arbitration Commission.

FIGURE 1.—Stock piles of grain at the port of Bahía Blanca. Surplus grain is being concentrated in Argentina at six principal locations (among them Bahía Blanca), where it is stored partly in elevators but mostly in the open, covered by tarpaulins or tin roofs.

In implementing its price-pegging policy, the Government decrees went considerably further than ever before, however. The November 14 decree provided that all wheat, flaxseed, and sunflower seed for export was to be acquired from the Grain Board, as well as all wheat and flaxseed for domestic consumption. No longer were wheat processors to be allowed to buy in the market on condition of paying the Board a 33-percent premium for the wheat purchased. Henceforth, wheat was to be purchased only from the Board and at a price 33 percent above the minimum basic price. The resale price of wheat to domestic millers, incidentally, was the same as that prescribed the year before. This new step was supposed to aid the Government in disposing of its old (1941-42) stocks, so that the surplus existing at the end of 1942 might be composed more largely of the newer crop.

The most drastic implementation of all, however, was suspending the futures markets for wheat, flaxseed, and sunflower seed. All pending operations in these grains were to be concluded at the closing prices of November 14 . While the futures market for trading in corn was left open technically, it was inoperative in practice because the minimum prices previously established by the Board far exceeded market quotations.

All in all, the Government on November 14 established what amounted to a virtual monopoly of the Argentine grain trade. Despite the war-generated crisis, it is standing by its policy of aiding agricultural producers - cost what it may financially or otherwise. Meanwhile, producers are being encouraged to grow less grain and to return to cattle raising. Acevedo, the Argentine Minister of Finance, expressed this idea late in 1941 when he said:[30]

[30] THE GOVERNMENT'S AGRICULTURAL POLICY. Rev. River Plate 91(2603): 7. 1941.

We must return without delay to cattle-raising. Meat, wool, hides, dairy produce, all enjoy ample markets. We should not be afraid of a situation of possible over-production in livestock after the war, because, although as yet we cannot clearly discern what lies beyond the darkness of this tragic night, it is better that our position should be the facing of a debatable future adversity, than the resigned acceptance of the present gloom. *Nothing is destroyed if, for one year, we fail to plow and sow.*

§

FOOD RATIONS IN GERMANY . . . . .

By J. H. Richter*

Effective April 6, 1942, adult meat and fat rations in Germany were reduced by from 20 to 25 percent and bread rations by somewhat under 10 percent. The only important previous reduction in food rations since the outbreak of war in 1939 was a 20-percent cut in meat, which took effect on June 2, 1941.

The reduction in the rations of meat, fats, and bread from April 6, 1942, affects all classes of adult consumers, including the so-called self-suppliers, or farmers. Children's rations have only partly been cut, and thus the curtailment of rations for families is less than for single adults. The new rations are tabulated in table 1, giving data for practically all rationed foods from the beginning of the war to date.

Table 2 gives estimated consumption in German worker families for the periods from the beginning of the war to June 1, 1941; from June 2, 1941, to April 5, 1942; and from April 6, 1942 - with pre-war comparisons. This table brings up to date and revises slightly the statistical computations in the February issue of Foreign Agriculture and should be read in conjunction with the text of that article.

The estimates of table 2 are predicated on the assumption that the appraisal of average consumption of unrationed foods for 1939-41 still holds good for 1941-42. This assumption is probably not fully justified, since at least for December-March 1941-42 the supply of potatoes to urban consumers appears to have been appreciably reduced compared with that of the winter of 1940-41, when, however, consumption was well above the average for 1939-41. There is no reliable indication as to the present level of human potato consumption in urban areas, and a revision in the estimates for the winter of 1941-42 will therefore have to wait until dependable material becomes available. Meanwhile it should be understood that the estimates of reductions in calories consumed since June 1, 1941, reflect only the changes in the official rations of meat, fats, and breadstuffs as effected on June 2, 1941, and April 6, 1942. No possible changes, either way, in unrationed foods have been taken into consideration, nor has any allowance been made for bootlegging in unrationed foods or for changes in the quantities of foods thus supplied.

Total calories consumed in German worker families from the outbreak of war to June 1, 1941, according to the latest calculations, probably ranged from 94 to 103 percent of the pre-war standard - taking the 1927-28 household budget inquiry as a basis. The reduction in meat rations on June 2, 1941, reduced calories by about 1 percent; the reduction in meats, fats, and breadstuffs on April 6, 1942, seems to amount to a cut of another 6 percent of pre-war consumption. To June 1, 1941, total proteins in the worker-family diet probably averaged from 93 to 103 percent of pre-war, animal proteins alone from 75 to 84 percent, and fats from 70 to 80 percent. The curtailment of the meat rations on June 2, 1941, reduced total proteins and fats by about 4 percent, and animal proteins alone by about 7 percent of pre-war. The reductions in meats, fats, and breadstuffs from April 6, 1942, imply another curtailment in proteins by about 7 percent and in fats by about 9 percent of the pre-war standard.

* Office of Foreign Agricultural Relations. For previous reviews of German food consumption see the October 1941 and February 1942 issues of Foreign Agriculture.

TABLE 1.—*Germany: Weekly food rations per person, August 1939-April 1942*[1]

FOODSTUFF	NORMAL CONSUMERS	LONG & NIGHT WORKERS	HEAVY WORKERS	EXTRA-HEAVY WORKERS	CHILDREN			
					0-3 YEARS	3-6 YEARS	6-10 YEARS	10-14 YEARS
	Grams	Grams	Grams	Grams	Grams	Grams	Grams	Grams
Bread, flour, and cereals:								
Bread and flour in terms of bread-								
To Apr. 5, 1942	[2] 2,250	2,850	3,650	4,650	1,100	1,100	1,700	2,600
From Apr. 6, 1942	[2] 2,000	2,600	3,400	4,400	900	1,200	1,700	2,600
Bread and flour in terms of flour-								
To Apr. 5, 1942	[2] 1,688	2,138	2,738	3,488	825	825	1,275	1,950
From Apr. 6, 1942	[2] 1,500	1,950	2,550	3,300	675	900	1,275	1,950
Farinaceous foods	[3] 75-150	[3] 75-150	[3] 75-150	[3] 75-150	[3] 275	[3] 275	[3] 75-150	[3] 75-150
Total, in terms of flour[4]-								
To Apr. 5, 1942	1,763-1,838	2,213-2,288	2,813-2,888	3,563-3,638	1,100	1,100	1,350-1,425	2,025-2,100
From Apr. 6, 1942	1,575-1,650	2,025-2,100	2,625-2,700	3,375-3,450	950	1,175	1,350-1,425	2,025-2,100
Legumes[5]	25-75	25-75	25-75	25-75	(6)	(6)	(6)	(6)
Sugar- To Apr. 1940	250	250	250	250	250	250	250	250
From Apr. 1940	225	225	225	225	225	225	225	225
Minimum extra allowances[7]	20	20	20	20	20	20	20	20
Marmalade- To May 4, 1940	100	100	100	100	100	100	[8] 150	[8] 150
From May 5, 1940, to Jan. 12, 1941	150	150	150	150	150	150	[8] 150	[8] 150
From Jan. 13, 1941	175	175	175	175	175	175	[8] 175	[8] 175
Or additional sugar in place of marmalade-								
To May 4, 1940	40	40	40	40	40	40	40	40
From May 5, 1940, to Apr. 5, 1942	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5
From Apr. 6, 1942	87.5	87.5	87.5	87.5	87.5	87.5	87.5	87.5
Artificial honey	(9)	(9)	(9)	(9)	[10] 31.3	[10] 31.3	[10] 31.3	[10] 31.3
Meat[11]- From Aug. 29, 1939, to June 1, 1941	500	600	1,000	1,200	250	250	500	500
From June 2, 1941, to Apr. 5, 1942	400	600	800	1,000	250	250	400	400
From Apr. 6, 1942	[12] 300	450	600	850	150	150	350	350
Fats and oils- To Apr. 5, 1942	268.7	288.8	393.8	737.5	125	187.5	259.4	259.4
From Apr. 6, 1942	[13] 206	226	306	575	125	187.5	259.4	259.4
Cheese	[13] 62.5	[13] 62.5	[13] 62.5	[13] 62.5	[13] 62.5	[13] 62.5	[13] 62.5	[13] 62.5
Curds[14]	31.25	31.25	31.25	31.25	-	-	-	-
Whole milk	(15)	(15)	(15)	(15)	5,250	3,500	1,750	1,750
Skim milk	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)
Eggs (number)[17]- Mar. - July	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Aug. - Feb.	1	1	1	1	1	1	1	1

[1] 28.35 grams = 1 ounce.

[2] 2,600 grams (bread) or 1,950 (flour) for persons from 14 to 20.

[3] Cereals, rice, and other products with a grain base. The official German ration of so-called Nährmittel is included in one item together with legumes. For purposes of comparison, however, only products with a grain base (estimated by Office of Foreign Agricultural Relations) have been included in the quantities given above. Estimates include sporadic extra allowances of rice.

[4] There is a flour supplement for south Germany of 187.5 grams per week; it is available to about 20 percent of the total civilian population of the Old Reich. The supplement increases the average civilian ration by about 2 percent.

From May 5, 1941, 500 grams of bread (or 400 grams of flour) could be exchanged for 125 grams of sugar.

[5] Rations estimated by Office of Foreign Agricultural Relations out of total allowances of Nährmittel (see footnote 3), plus extra allowances made from time to time.

[6] Available data do not suffice for a reliable estimate.

[7] At least 500 grams twice a year - as at Christmas 1940 and in the 1941 jam-making season.

[8] Plus extra 50-gram allotment, not convertible to sugar.

[9] 125 grams every 3 months, plus rare extra allowances of 125 grams per 4 weeks.

[10] Plus 125 grams every 3 months.

[11] Rations include 20 percent bone.

[12] 350 grams for adolescents from 14 to 18 years.

[13] At times this ration was only 46.88 grams per week. In rare cases it was only 31.3 grams. For some periods the ration of 62.5 grams was replaced by 170 grams of condensed milk, or consumers were given the choice of 125 grams of curds for 62.5 grams of cheese. Reductions from the basic level were largely compensated for by extra allowances of condensed milk or curds.

[14] Equals cottage cheese. Available without ration cards from July to November 18, 1940.

[15] Wartime rations of whole milk, as a rule, are reserved for children. Expectant and nursing mothers, invalids, sick people, and workers in certain occupations detrimental to health (chemical industries) upon application may receive 3½ liters per week.

Some difficulty in the supply of milk rations seems to have arisen in February 1942 as a result of transport problems.

[16] Skim milk is said to be available to all types of urban consumers in quantities considerably above pre-war sales of whole milk plus skim milk.

[17] Allowances varying by seasons. Probably one to two eggs per urban consumer per week in first 2 years of war.

TABLE 2.—*Tabulation of energy values of most important items in the German diet, 1939-42 with comparisons*[1]

ITEM	ASSUMED FUEL VALUES PER 100 GRAMS[2]		WEEKLY CONSUMPTION PER FAMILY IN WORKER HOUSEHOLDS		WEEKLY RATIONED AND UNRATIONED CONSUMPTION PER FAMILY IN WORKER HOUSEHOLDS 1939-42[5]			FUEL VALUES OF WEEKLY CONSUMPTION				
										RATIONED AND UNRATIONED, 1939-42		
	PRE-WAR	WARTIME	1927-28[3]	1937[4]	ALL ADULTS "NORMAL" CONSUMERS	INCLUDING ONE ADULT MALE "LONG AND NIGHT WORKER"	INCLUDING ONE ADULT MALE "HEAVY WORKER"	1927-28 FAMILIES	1937 FAMILIES	ALL ADULTS "NORMAL" CONSUMERS	INCLUDING ONE ADULT MALE "LONG AND NIGHT WORKER"	INCLUDING ONE ADULT MALE "HEAVY WORKER"
	Calories	Calories	Grams	Grams	Grams	Grams	Grams	Calories	Calories	Calories	Calories	Calories
Bread, flour, and cereals, in terms of flour	360	360	6,962	6,992	14 6,954 6 6,489	14 7,404 6 6,939	14 8,004 6 7,539	25,063	25,171	14 25,034 6 23,360	14 26,654 6 24,980	14 28,814 6 27,140
Sugar, jams, sweets, etc., in terms of sugar[7]	400	400	1,113	1,063	1,386	1,386	1,386	4,452	4,252	5,544	5,544	5,544
Potatoes	80	80	9,765	10,200	8 16,320	8 16,320	8 16,320	7,812	8,160	13,056	13,056	13,056
Legumes	350	350	173	133	150	150	150	606	466	525	525	525
Other vegetables	30	30	2,450	2,265	9 2,450	10 2,700	11 2,950	735	680	735	810	885
Fruits and nuts	50	50	1,817	1,160	1,000	1,000	1,000	909	580	500	500	500
Meats	12 300	12,13 250	2,817	2,278	14 1,925 15 1,575 6 1,210	14 2,025 15 1,775 6 1,360	14 2,425 15 1,975 6 1,510	8,451	6,834	14 4,812 15 3,938 6 3,025	14 5,063 15 4,438 6 3,400	14 6,062 15 4,938 6 3,775
Fats and oils	800	800	1,410	1,277	6 1,040 6 892	6 1,060 6 912	6 1,167 6 992	11,280	10,216	6 8,320 6 7,136	6 8,480 6 7,296	6 9,336 6 7,936
Cheese	400	300	294	290	262	262	262	1,176	1,160	786	786	786
Curds	100	100	-	-	75	75	75	-	-	75	75	75
Eggs	16 80	16 80	17 9.1	17 5	17 4	17 4	17 4	728	400	320	320	320
Fish	130	130	408	421	300	300	300	530	547	390	390	390
Whole milk	18 65	19 55	9,127	6,890	4,900	4,900	4,900	5,933	4,478	2,695	2,695	2,695
Skim milk	36	36	96	267	3,000	3,000	3,000	35	96	1,080	1,080	1,080
Total calories per family per week[1]								20 67,710	21 63,040	14 63,872 15 62,998 6 59,227	14 65,978 15 65,353 6 61,457	14 70,068 15 68,944 6 64,707
Total calories per person per day[1,22]								2,303	2,196	14 2,172 15 2,143 6 2,014	14 2,244 15 2,223 6 2,090	14 2,383 15 2,345 6 2,201
Percentage of 1927-28								100	95	14 94 15 93 6 87	14 97 15 96 6 91	14 103 15 102 6 96
Percentage of 1937								105	100	14 99 15 98 6 92	14 102 15 101 6 95	14 108 15 107 6 100

[1] Excludes certain products such as coffee, tea, cocoa, alcoholic and non-alcoholic beverages, cream, and not separately specified foods.

Compare also previous compilation, table 1, pp. 78-79 of Foreign Agriculture, February 1942, which has been slightly revised.

[2] Based on CHATFIELD, CHARLOTTE, AND ADAMS, GEORGIAN. PROXIMATE COMPOSITION OF AMERICAN FOOD MATERIALS. U. S. Dept. Agr. Cir. 549, 91 pp. 1940. Estimates for groups of products made by the Office of Foreign Agricultural Relations.

[3] [GERMANY] STATISTISCHES REICHSAMT. DIE LEBENSHALTUNG VON 2000 ARBEITER-, ANGESTELLTEN- UND BEAMTENHAUSHALTUNGEN. [Germany] Statis. Reichsamt Einzelschr. z. Statis. des Deut. Reichs, No. 22. 1932. Sample of 896 worker families. Family average 4.2 persons, of which 2.4 adults and 1.8 children under 15 years of age. Average family income 3,325 reichsmarks.

[4] [GERMANY] STATISTISCHES REICHSAMT. WIRTSCHAFTSRECHNUNGEN VON 350 ARBEITERHAUSHALTUNGEN FÜR DAS JAHR 1937... Wirtschaft u. Statis. 19: 118-126, 323-329, illus. 1939. Sample of 350 worker families at lower economic level. Family average 4.1 persons, of which 2.2 adults and 1.9 children under 15 years of age. Average family income 2,186 reichsmarks, or about 2,600 reichsmarks at 1927-28 price level (conversion made on basis of official cost-of-living index).

[5] Rationed consumption as per official rations; unrationed consumption estimated by the Office of Foreign Agricultural Relations. Worker families assumed to have been constituted exactly as those polled in the inquiry of 1927-28: 1.24 men, 1.16 women, 0.3 child up to 3 years old, 0.4 child 3 to 6 years old, 0.6 child 6 to 10 years old, and 0.5 child 10 to 14 years old, or 2.4 adults and 1.8 children, or 4.2 persons to an average worker family. For these age and sex distributions see pp. 13-16 of reference cited in footnote 3.

[6] From April 6, 1942.

[7] Sugar content of items other than sugar estimated at about 50 percent.

The change in the exchange ratio of sugar for marmalade effected on April 6, 1942, is assumed not to have changed, on the whole, the calories of sugar consumed.

[8] Estimated increase 60 percent over 1937, revising upward the estimate given in Foreign Agriculture, February 1942.

[9] Estimated increase over 1927-28 zero.

[10] Estimated increase over 1927-28 10 percent.

[11] Estimated increase over 1927-28 20 percent.

[12] Allowance made for bone.

[13] Estimated on basis of assumption that wartime meat supply has less fuel value largely because of higher share of lean meat.

[14] Up to June 1, 1941, before meat ration was reduced.

[15] From June 2, 1941, to April 6, 1942, after first reduction of meat ration.

[16] Per egg.

[17] Number.

[18] Lower fuel value estimated on basis of lower fat content of fresh milk in Germany.

[19] Estimated on basis of assumption that wartime fat content of fresh milk is below pre-war standard.

[20] Family of 4.2 persons.

[21] Family of 4.1 persons.

[22] The estimates of calories consumed agree rather closely with calculations for all foods made independently by Catherine Corson, of the Office of the Coordinator of Information, whose estimates for each individual consumer group, if converted into data per "normal worker family," give 2,400, 2,500, and 2,600 calories per person per day, respectively, for June 2, 1941. The differences of these figures compared with our somewhat lower estimates are fully explained by the inclusion in Miss Corson's data of consumption items not included in ours, by slight deviations in the estimates for unrationed foods, and by some differences in the energy coefficients applied.

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